



# FLIGHT

&  
The AIRCRAFT  
ENGINEER.



First Aero Weekly in the World.  
Founder and Editor : STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.  
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**CONTENTS.**

	PAGE
Editorial Comment :	
Fuel Oil in Britain .. .. .	875
The I.P.T. and Oil from Cannels .. .. .	876
A Question of Monopoly .. .. .	876
The Great Dope Monopoly .. .. .	877
Honours .. .. .	878
The Roll of Honour .. .. .	883
The Pfalz Single-Seater Fighter .. .. .	885
Personals .. .. .	888
Airships from the Four Winds .. .. .	889
The Royal Air Force .. .. .	891
Aviation in Parliament .. .. .	893
Aircraft Work at the Front. Official Information .. .. .	897

**EDITORIAL COMMENT.**

"Newspapers are an essential part of our war organisation."  
(Sir Auckland Geddes, Minister of National Service.)



HE question of the production of fuel oil from home sources — so vitally important to the aircraft industry — has recently been investigated by a Committee appointed by the Minister of Munitions, under the chairmanship of the Marquis of Crewe. The Report of this Com-

mittee states that the best method is the carbonisation of cannel coal in existing vertical retorts at gas works, although no very largely increased quantity of oil can be obtained from this source during the war, owing to difficulties of labour, coal transport, &c. The Petroleum Research Department had recommended the erection of batteries of a form of low temperature retort for the carbonisation of cannel coal, but an experimental investigation of low temperature processes by the Ministry has proved that the suggestion is impracticable, on the grounds of expense, shortage of labour, time involved, and the fact that the mineral is not available in the quantities which the first investigations indicated.

The Committee indicates other sources of supply as available in the future. These sources include boring for oil in Great Britain, the further development of the Scottish shale oil industry, and the increased carbonisation of raw coal. In this latter connection the Report states that some 1,250,000 tons of fuel oil might be obtained from every 20,000,000 tons of coal carbonised.

It would be interesting to know how the Committee arrived at its conclusion that the Report of the Petroleum Research Department on the subject of the low temperature carbonisation of cannel was "impracticable" in character, and exactly what were the experiments of the Ministry of Munitions which demonstrated it to be so. It would be still further interesting to know what has become of the Petroleum Research Department. Is it still carrying on its research work, or is it a fact that the personnel of the Department, finding that in its recommendations it was up against opposition from certain quarters, has ceased work for the Ministry, and, despairing of the latter ever moving in the matter of low-temperature processes, is now endeavouring to get the recovery of fuel oil from the cannels taken up privately? Is it a fact that more than one private concern has offered to erect the necessary retorting plants and to supply the Government with fuel oils at a fraction of what they are costing to import, and have found themselves blocked at every turn by official opposition? Did Lord Crewe's Committee have before it any of the evidence available in the matter of this opposition from inside, and if not why was it not called? If the facts are as indicated in the Crewe Report, and there is not a great deal of cannel coal available, why is it that there is at the present moment in existence a syndicate composed of some of our foremost petroleum technologists and certain great colliery owners, which is perfectly prepared to start work as soon as the opposition referred to can be overcome? And why are the opinions of those who compose this group and are willing to risk their own money in developing the industry so diametrically opposed to the findings of the Crewe Committee, more particularly as their own investigations have been exhaustive in their character and have extended over a period of very many months, as against the comparatively few weeks taken by the Crewe Committee to hear all the evidence and arrive at its



conclusions? These are only a few of the questions which we should like to see satisfactorily answered, though there are many others which all bear upon the same subject and require to be adequately disposed of before we should be content with the position as it relates to the all-important question of home-produced fuel.

The Committee, we observe, lays a certain amount of stress on the source of supply at hand in the carbonisation of coal in vertical retorts at gas works. But the Report does not say how much money has been wasted and how much time thrown away in the attempt to convert those vertical retorts to the purpose of producing fuel oil, neither does it enlighten us as to actually how much fuel oil has been obtained from the resultant process. Our own information is that the scheme has been a huge and costly failure, and has produced a lot of quite useless tar, but very little oil. There is a great deal we should like to say on the subject investigated by the Crewe Committee were the moment more opportune or the information we have at our disposal more complete, but all we intend to say now is that the Report does not strike us as being at all complete or even satisfactory as far as it goes.

Following close on the heels of the **The I.P.T. and Oil from Cannels.** Report of the Crewe Committee, an interim report has been issued by the Committee appointed by the Institution of Petroleum Technologists last

February to obtain evidence in respect of the quantity of cannel coal and allied minerals available in Great Britain as a source of motor spirit, fuel oil and other products. The report states that sufficient evidence has been obtained from colliery proprietors and others to justify the conclusion that a very large amount of retortable material can be obtained for the production of oil in Great Britain. As a result of tests carried out by various processes, it has been established that a yield of between 15 and 80 gallons of crude oil per ton can be obtained from material existing in the British Isles. This crude oil can be refined to give at least 8 per cent. of light spirit and from 40 per cent. to 50 per cent. of fuel oil. The committee is satisfied that at least 10,000 tons per day of retortable material could be assembled for treatment, provided the Government would give the necessary facilities and the requisite labour were available. At an average of 30 gallons of oil per ton this would yield 300,000 gallons of crude oil per day, or more than 400,000 tons a year.

The report points out that the situation as to supplies of fuel oil is to be regarded with serious apprehension, as also is the long delay in taking action to develop home resources. The Committee, therefore, urges the Government to lay down a definite policy for the guidance of the Departments as to the relative national value and importance of oil and coal and the provision of the necessary labour, raw materials and transport; that the Government should afford all necessary facilities to those who are prepared to find the capital and take the risk for the erection at suitable centres of plant for the treatment on a commercial basis of the material known to exist; that an experimental station should be established at once, so that any retorts of a design provisionally approved by the Institution of Petroleum Technologists may be erected and tried out and the material tested with a view to ascertaining its character, oil yield, and residual values; and that

either this station should be maintained at the expense of the Government or that the latter should give the Institution all the necessary and reasonable facilities for erecting a station of its own. The Council of the Institution have resolved that the Prime Minister and the War Cabinet shall be requested to receive a deputation representing the Committee and the Institution for the purpose of considering the best and most speedy method of carrying out the recommendations contained in the report.

It is quite clear that the report of this Committee and the Crewe Report are completely at issue on the main conclusions. On the one hand, the Institutions Committee, which has given months of study and has carried out numerous experiments of its own, seems to be completely satisfied that in the cannels we have a most valuable asset for oil production. It is a committee of experts and should thus know what it is talking about. On the other hand, we have the Crewe Committee, which appears to have been constituted more as a judicial than as an expert body, and which, after hearing certain evidence has come to the conclusion that there is very little to be hoped for in the meantime from the very source to which the other committee attaches capital importance. We confess the situation becomes bewildering to the average person who is not behind the scenes to watch the conflict of interests which has undoubtedly arisen in this direction. However, the deputation to the Prime Minister—if he consents to receive it, as we submit he should—may have the effect of clearing up the situation to some extent.

**A Question of Monopoly.** In the House of Commons recently the Prime Minister was asked whether the firm of S. Pearson and Sons had offered to place the whole of their geological, and oil expert staff gratuitously at the disposal of the Government; whether Messrs. Pearson anticipated to strike oil within six months in this country at the rate of tens of thousands of tons of oil per annum; whether the whole of Messrs. Pearson's staff was ready at once to commence operations; whether the sole cause of the delay to commence boring was the failure of the Government to introduce legislation to enable Messrs. Pearson to conserve the oil for the nation by the most profitable methods; and, if so, whether such legislation would at once be passed to secure in Britain a motive power for the British Navy.

In answering the question, Mr. Bonar Law said that an offer substantially to the effect stated in the question had been made, and that he understood the staff was ready to commence operations, but the firm was desirous that before actual boring commenced a Bill should be introduced for restricting indiscriminate boring for oil. An endeavour has been made to settle a Bill which could be passed by general agreement. Asked further whether it was proposed to confer a monopoly on this firm, the Leader of the House said it was not, but that the firm would act as agents for the Government.

It does not seem to us that the reply disposed of the reasons for the delay in commencing operations. The matter is one of extreme urgency, since we are dependent upon overseas sources for all our supplies of fuel for the Royal Air Force, for the Navy and for our mechanical transport services. Every gallon required for their use has to run the gauntlet of the enemy's submarines, additionally to facing the ordinary perils of the sea, so that it is abundantly



clear that every day's delay in opening up our home resources exposes us to danger. If, therefore, it is only the matter of preventing indiscriminate boring for oil that is holding up the matter it should be easy for the Government to deal with it in the meantime by means of regulations under DORA. Far less urgent matters have been so dealt with, and quite successfully. Moreover, it ought to be fairly clear to the Government that the Petroleum (Production) Bill as it stands now in draft is not likely to pass the ordeal of debate without the most strenuous opposition and it is highly improbable that it will reach the Statute Book this session, even if it should be introduced before the House rises, which does not seem possible now. The Bill, in spite, of Mr. Bonar Law's disclaimer of any intention to confer a monopoly, most certainly does give power to the Government to create a monopoly and one of the most objectionable type at that. Not only so, but it is a frankly confiscatory measure which attempts to do away at a stroke with all the rights of property. Therefore, as we have said, it is not likely to pass without the most serious delay—and meanwhile we continue to import the whole of our liquid fuel supplies. There is something about the whole question of British petroleum and what may be called the recovered fuels that looks as though vested interests were at work and were proving too too strong for the Government to be able to act as it should in the clear interests of the nation.

### The Great Dope Monopoly.

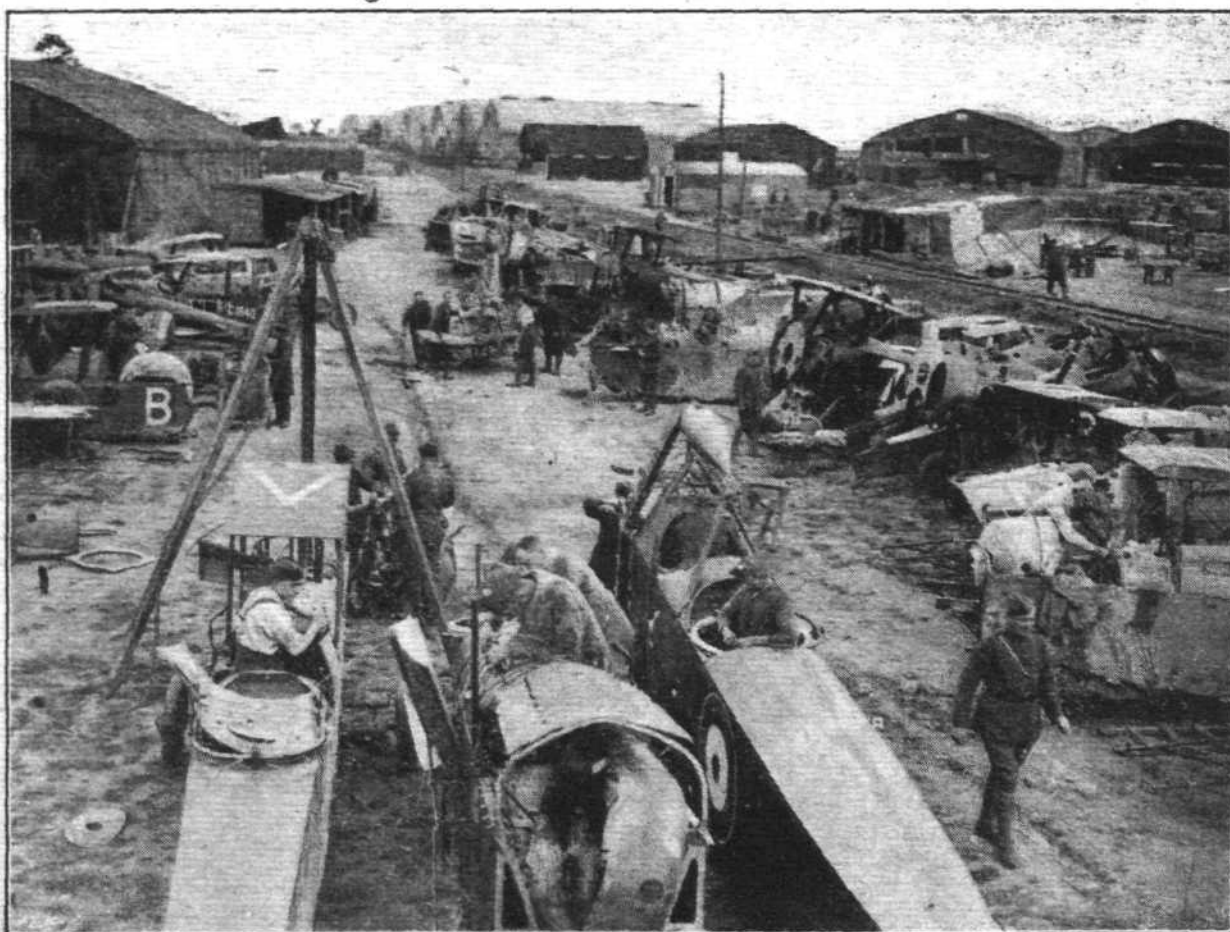
Following on the caustic comments of the Committee on National Expenditure on the subject of the dope monopoly, and the even more drastic comments in the Press, the whole matter was debated in the House of Commons on Monday evening last. Sir William Bull raised the matter as the champion of the company, and asked that the house should suspend judgment until its explanation had been given.

He completely ridiculed the idea that the Company's sixpenny shares were worth £14 10s. On the contrary, they were worth just what they were originally. No excess profits had been paid, and he understood from the accountant that there had been a considerable loss ever since the Company was first started. The Company had invested a million and a half in setting up new works to turn out dope for the Government, and the ultimate expenditure would reach something like three millions. This had been done at the urgent request of the Government, and the Company felt that the Committee had unjustly attacked them. He expressly disclaimed having any personal interest in the matter.

Replying for the Ministry of Munitions, Mr. Kellaway said that in view of the conclusions of the Committee and certain statements in their report, the Government could not allow the matter to stand where it was—a very obvious and wise decision. It had been agreed, therefore, that a strong and competent body should be set up to examine the report and this body would report at the earliest possible moment. He assured the House that the Government would not hesitate to take such action as might appear necessary on the Committee's report. The most scrupulous care would be taken to see that the country got value for its expenditure. After some further discussion, Mr. Bonar Law announced that the body to be set up would be more than a departmental committee and would take evidence on oath.

In view of the decision of the Government that the whole question is to be sifted to the bottom, it would be highly improper to comment further upon the facts that have already been disclosed by the Report of the Select Committee and by the publication of further facts, which have resulted from Press investigations into the history of the company from its inception. We can only await with redoubled interest the proceedings and report of the new Committee of Enquiry.

Ministry of  
Information.  
In Hospital.  
—Damaged  
aeroplanes  
at an R.A.F.  
repair de-  
pot on the  
British  
Western  
Front in  
France.





# HONOURS

## Honours for Zeebrugge.

It was announced in a supplement to the *London Gazette* of July 23rd that the following honours and rewards have been approved, for services in the operations against Zeebrugge and Ostend on the night of April 22nd-23rd.

### Distinguished Service Medal.

*H.M.S. Vindictive*.—O.N. F.6981 Chief Mech. C. Armitage, R.N.A.S. *H.M.S. Daffodil*.—O.N. F.13706 Leading Mech. G. Pemberton, R.N.A.S. *Picket Boats, &c.*—O.N. F.20056 Air-Mech., 1st Grade, J. F. D. Shrewsbury, R.N.A.S.

The following officers and men were mentioned in despatches by Vice-Admiral Sir Roger J. B. Keyes, K.C.B., C.M.G., C.V.O., D.S.O., commanding the Dover Patrol for distinguished services on the night of April 22nd-23rd, 1918.

Maj. (T. Lieut.-Col.) F. A. Brock, O.B.E., R.A.F. (killed in action); Maj. (T. Lieut.-Col.) J. T. Cull, D.S.O., R.A.F.; O.N. F. 39326 Air-Mech. R. R. Entwistle, R.N.A.S.; O.N. F.19842 Air-Mech. W. H. Gough, R.N.A.S.; O.N. F.48864 Ch-Air Mech., 2nd Class, W. G. Ryan, R.N.A.S.; O.N. F.26702 Air-Mech., 1st Cl., G. Warrington, R.N.A.S.

The following officers of the R.A.F. were mentioned by Sir Roger Keyes for services in connection with the preparatory work of the operations:—

Col. (T. Brig.-Gen.) C. L. Lambe, C.M.G., D.S.O., R.A.F.; Lieut.-Col. F. C. Halahan, M.V.O., D.S.O., R.A.F.; Maj. (T. Lieut.-Col.) P. F. M. Fellowes, D.S.O., R.A.F.

## Awards to Pilots and Observers.

It was announced in a supplement to the *London Gazette* on August 3rd that the King has been pleased to confer the following rewards on Officers of the Royal Air Force, in recognition of gallantry in flying operations against the enemy:—

### Second Bar to D.S.O.

Lieut. (T. Capt.) E. MANNOCK, D.S.O., M.C. (formerly R.E.).—This officer has now accounted for 48 enemy machines. His success is due to wonderful shooting and a determination to get to close quarters; to attain this he displays most skilful leadership and unfailing courage. These characteristics were markedly shown on a recent occasion when he attacked six hostile scouts, three of which he brought down. Later on the same day he attacked a two-seater, which crashed into a tree. (The announcement of award of Distinguished Service Order, and First Bar thereto, will be published in a later *Gazette*.)

### Distinguished Service Order.

Lieut. (T. Capt.) J. GILMOUR, M.C. (formerly A. and S. Highrs.).—He is a most inspiring patrol leader who has destroyed 23 enemy aircraft, and shot down eight others out of control. While leading an offensive patrol he shot down one enemy biplane in flames and drove down a second. A short time afterwards, he, with four others, attacked about 40 enemy scouts. He himself destroyed one in the air, drove another out of control and a third in flames, successfully accounting for five enemy machines in one day.

Lieut. F. R. MCCALL, M.C., D.F.C. (formerly Alberta Regt.).—A brilliant and gallant officer who has accounted for 14 enemy machines. On a recent date he destroyed four during a patrol in the morning, and another in the evening, in each case closing to point-blank range with his opponent. His courage and offensive spirit has inspired all who serve with him. (The announcement of award of Distinguished Flying Cross to Lieut. McCall is also contained in this *Gazette*.)

### Distinguished Flying Cross.

Lieut. (T. Capt.) R. AFFLECK.\*—For conspicuous gallantry and devotion to duty in bombing by night, despite adverse weather conditions, enemy lines of communication and aerodromes. During the last few months he has carried out many bombing raids, and has set a brilliant example of keenness and determination.

Lieut. (T. Capt.) S. ANDERSON.—A most successful leader of patrols who has often saved squadron casualties by the skilful manner in which he has kept his patrols in hand and in formation. On a recent date, while leading his formation, he was attacked by about 40 aeroplanes. Both he and his observer were wounded, but with great gallantry he continued to keep the formation together, and led the same successfully back to his aerodrome. He has taken part in 53 bomb raids and five photographic reconnaissances.

Lieut. L. A. ASHFIELD.\*—A very capable officer of exceptional judgment and courage. He has carried out 62 flights behind the enemy lines with invariable success. During the last

few months he has engaged 17 enemy machines, and has been instrumental in destroying five. On one occasion he attacked five enemy aeroplanes, bringing down one in flames.

Lieut. (T. Capt.) E. D. ATKINSON.\*—A brilliant fighting pilot whose flight has proved very successful under his leadership, often in combats where the enemy formation was numerically superior. Capt. Atkinson destroyed single-handed five enemy machines, during May, and previously, while serving with another squadron, he brought down two enemy aeroplanes and one balloon.

Lieut. G. G. BAILEY.\*—A successful fighting pilot who has destroyed on several occasions enemy machines. Lieut. Bailey displays great gallantry and determination in carrying out his duties.

Capt. T. A. BATCHELOR.\*—Displayed great gallantry, determination and skill in a night bombing raid under exceptionally adverse conditions. Two machines set out on this raid, but an accident befell one of them, which gave the enemy warning, and Capt. Batchelor's machine was accordingly subjected to very intense fire. He continued his course and dropped his bombs on a vulnerable position in the enemy's strong post from a height of 500 ft. He was wounded in the arm, but managed with great difficulty to return. The loss of blood consequent on the wound made it very difficult to control his heavy machine, the petrol tank of which had been hit. He invariably displays great bravery and skill in action.

Lieut. (Hon. Capt.) O. L. BEATER.—Has proved himself on many occasions a most skilful and gallant observer on long-distance bombing raids, bringing back much valuable information and many good photographs. He has taken part in 20 raids and eight photographic reconnaissances.

Lieut. (T. Capt.) A. W. BEAUCHAMP-PROCTOR, M.C.\*—A brilliant and fearless leader of our offensive patrols. His formation has destroyed 13 enemy machines and brought down 13 more out of control in a period of a few months. On a recent morning his patrol of five aeroplanes attacked an enemy formation of 30 machines and was successful in destroying two of them. In the evening he again attacked an enemy formation with great dash, destroying one machine and forcing two others to collide, resulting in their destruction.

Capt. (T. Maj.) W. A. BISHOP, V.C., D.S.O., M.C. (formerly Can. Cav.).—A most successful and fearless fighter in the air, whose acts of outstanding bravery have already been recognised by the awards of the Victoria Cross, Distinguished Service Order, Bar to the Distinguished Service Order, and Military Cross. For the award of the Distinguished Flying Cross now conferred upon him he has rendered signally valuable services in personally destroying 25 enemy machines in 12 days—five of which he destroyed on the last day of his service at the front. The total number of machines destroyed by this distinguished officer is 72, and his value as a moral factor to the Royal Air Force cannot be over-estimated.

Lieut. H. BRIGGS.\*—A gallant officer whose perseverance and keenness sets a most valuable example to the officers of his squadron. During one week he carried out 12 successful shoots under difficult conditions, his flying time for the week being 22 hours.

Lieut. (T. Capt.) F. T. BRIGHT.—A resolute, gallant, and skilful leader of long-distance night bombing raids, in 22 of which he has been engaged. On a recent occasion his formation succeeded in dropping incendiary and other bombs on 13 hangars belonging to the enemy, doing very great damage thereto.

Lieut. E. G. BROOKES.—While leading a patrol of six machines, escort to a bombing formation, he drove off a patrol of 15 enemy scouts that was about to attack the bombers, shooting down one of the scouts in flames, and so enabled the bombers to complete their task. After protecting another bombing formation from a threatened attack, he escorted a third formation to and from the lines, although by that time the number of his machines was reduced to three. On the last journey two enemy triplanes attacked one of the bombers, whose observer had been killed; engaging them, he drove one down out of control, and forced the others to retire. He is a skilful and fearless officer, who has done excellent work in reconnaissance and in attacking enemy troops close to the ground.

Lieut. LE R. L. BROWN (formerly 2nd Can. D.S. Column).—Whilst on counter-battery photography this officer was attacked by two triplanes and four biplanes. His gravity tank exploded, and caught fire, but blew out. His centre section struts were shot through, also his wind shield. There were altogether 50 holes in his machine. After about a quarter of an hour's fighting he reached our lines. He then returned



to complete his photography, climbing to 19,000 ft. In thus returning, after having been so badly shot about, he showed a splendid example of courage and determination.

Lieut. (T. Capt.) A. R. CHURCHMAN.\*—Within the past month this officer has been successful in rendering very valuable services in directing our artillery fire on enemy positions. Owing to his skill and judgment on many occasions concentration of our fire was brought on enemy batteries with such precision that great damage was effected.

Lieut. W. G. CLAXTON.—This officer at all times shows fine courage and disregard of danger. He has accounted for six enemy aeroplanes and one kite balloon, three of the aeroplanes being destroyed and three driven down out of control. On a recent occasion, having destroyed a hostile balloon, he pursued an enemy scout 10 miles and eventually drove it down; he was then attacked by five enemy triplanes and other scouts, but managed to return to our lines, though his machines was riddled with bullets.

Lieut. (T. Capt.) A. CLAYDON (formerly Can. F.A.).—Recently this officer, single-handed, went to the assistance of another pilot, who was attacked by 11 Fokker biplanes and six scouts. By his gallant conduct and skilful manoeuvring he not only extricated the pilot, but drove down several of the enemy aeroplanes. He has shown great initiative and gallantry in locating, bombing, and attacking troops on the ground from low altitudes.

Lieut. (T. Capt.) P. J. CLAYSON, M.C.\*—A patrol leader of great skill, and a skilful marksman, whose personal fighting successes have proved of much value to the squadron. Capt. Clayson's patrol frequently encountered enemy formations in superior numbers, but invariably succeeded in inflicting serious losses.

Lieut. (Hon. Capt.) W. F. CLEGHORN.—A distinguished and gallant leader of bomb raids, in 59 of which he has been engaged. In his last engagement recently his formation was attacked by a large number of enemy aircraft, but, nevertheless, 68 bombs were dropped successfully on the objective, and in the fight which afterwards ensued three enemy aeroplanes were destroyed and five others brought down out of control.

Lieut. (T. Capt. A. H. COBBY (Aus. F.C.).\*—Has proved himself a very gallant and successful fighter and patrol leader, setting a fine example to the squadron. Within the last few months he has destroyed a number of enemy balloons and aeroplanes.

Lieut. (T. Maj.) R. COLLISHAW, D.S.O., D.S.C.—This officer is an exceptionally capable and efficient squadron commander under whose leadership the squadron has maintained a high place in the Army Wing. He has carried out numerous solo patrols and led many offensive patrols, on all occasions engaging the enemy with great bravery and fearlessness. Up to date he has accounted for 47 enemy machines, 22 in the last 12 months.

Lieut. (T. Capt.) L. P. COOMBES.—This officer displays conspicuous bravery and skill in attacking enemy aeroplanes. During the last three months he has accounted for five.

T. Lieut. J. A. E. R. DALEY (formerly B.W. Indies Regt.).—This officer has destroyed five enemy aeroplanes and two kite balloons, displaying marked skill and daring in these several actions, and also in attacking troops close to the ground.

Lieut. (Temp. Capt.) C. H. DARLEY, D.S.C.\*—An officer with a fine record of gallantry to his credit. During the past two years he has been flying in active operations, 12 months of which was on night flying bombing work, being on one occasion in the air in bad weather for 7½ hours. On several occasions he has carried out two raids on the same night, and during the past month he has successfully attacked a very formidable enemy position from a height of 200 ft. in the face of very intense fire.

Lieut. V. DRESCHFIELD.—This officer invariably shows the greatest gallantry and devotion to duty. During recent operations he has frequently engaged troops and transport, causing heavy casualties. On one occasion at an altitude of 700 ft., two enemy aeroplanes were set alight by tracer ammunition fired from his Lewis gun. He has taken part in many successful bombing raids and long-distance reconnaissances.

Lieut. H. FALL.\*—Has been very successful in bombing enemy positions and trains from low altitudes. During the past seven months he has taken part in 60 night-raiding expeditions. Lieut. Fall has displayed great skill, courage, and determination.

Lieut. (Temp. Capt.) M. H. FINDLAY, D.S.C.\*—A skilful and courageous patrol leader. During the past few months this officer has destroyed seven enemy machines and brought down seven more out of control. On one occasion he fought an enemy machine from 18,000 ft. down to an altitude

of 10,000 ft., at which point he gained an advantage and destroyed his antagonist.

Lieut. (Temp. Capt.) J. H. FORMAN.\*—A skilful patrol leader who has displayed on all occasions a high standard of courage, endurance, and skill. In a period of 10 months he has been engaged on 77 offensive patrols, and has brought down three enemy aeroplanes in flames and five out of control.

Capt. H. G. FORREST (Australian Flying Corps).—His leadership of patrols has been characterised by great dash and determination, whether on high or low work. He has displayed skill in manoeuvring and boldness in attacking superior numbers.

Lieut. (Temp. Capt.) R. M. FOSTER.—This officer had taken part in numerous combats and led his patrols brilliantly; he has destroyed five hostile machines. On one occasion he attacked two biplanes single-handed; one he forced down and the other burst into flames and broke up in the air.

Capt. D. GILLEY.\*—During a recent night bombing raid on an enemy railway station he realised when gliding down towards his objective that he would overshoot his mark, so he opened out his engine at 1,000 ft. in the face of very severe machine-gun fire, and climbed sufficiently high to enable him to get directly over his objective, in which he succeeded and dropped his bombs on the sidings from an altitude of 600 ft. He then descended to 200 ft. and enabled his observer to fire several bursts of machine-gun fire into the station and sidings. He has successfully carried out many long distance raids, and invariably set a high standard of keenness and proficiency to his squadron.

Temp. Capt. F. GODFREY (late Midd'x Regt.).—This officer has taken part in many offensive patrols. During recent operations he has accounted for eight enemy aeroplanes, proving himself at all times a skilful and bold airman.

Lieut. J. E. GURDON.—This officer is a brilliant fighting pilot who on all occasions shows great determination with entire disregard of personal danger. He has personally destroyed nine enemy machines. On a recent date when on offensive patrol with another Bristol fighter he attacked a formation of seven enemy machines; one of these he shot down in flames. The enemy were then reinforced by two other formations, which brought their number up to 20. Fighting continued for about half an hour when the Bristol broke off the engagement, their ammunition being exhausted. Only seven enemy machines remained, many having been seen to spin away, and one was shot down by this officer.

Lieut. (Temp. Capt.) R. HALLEY.—A gallant and determined leader in long-distance night bombing raiding. Has been most successful in many of these raids, generally under adverse weather conditions and intense anti-aircraft fire from the enemy, and having had to fire by compass course owing to density of mist. In his last raid the flight outward and homeward lasted eight hours.

Lieut. H. N. HAMPTON.—He recently carried out a night reconnaissance lasting three hours; at times he descended to within 500 ft. of the ground, following down his Michelin flares to this height in the face of intense machine-gun fire. By this means he and his observer were able to obtain valuable information. During the past five months he has taken part in 41 bombing raids, many of which were a long distance over the enemy's lines.

Lieut. W. F. J. HARVEY.—As a fighting pilot this officer has the real offensive spirit regardless of personal danger. He has destroyed several enemy machines whilst fighting against superior numbers.

Lieut. C. R. R. HICKEY.\*—Has been engaged in numerous air battles with marked success during a period of 12 months. On a recent occasion he flew to the assistance of one of our machines which was being pressed by two enemy machines and succeeded in destroying one of them.

Sec. Lieut. R. J. HOOK (late Rifle Brigade).—He has carried out 22 night bombing raids, displaying great endurance and fearless disregard of self. On a recent occasion he carried out a comprehensive reconnaissance by night in heavy rain at a height of only 400 ft. He returned to his aerodrome in the face of a blinding storm after a flight of three hours.

Capt. W. H. HUBBARD.—During recent operations he has repeatedly descended to low altitudes to release his bombs and to open machine-gun fire on troops and transport. He has shown the greatest gallantry, judgment, and presence of mind. On several occasions he has attacked and driven down out of control enemy aeroplanes.

Lieut. A. T. IACCACI.—This officer has taken part in many engagements, and he and his observer have been most successful in destroying enemy machines. A resolute and skilful airman.



Lieut. (Temp. Capt.) G. IRVING.—He has carried out numerous offensive patrols, and under his able leadership many enemy formations have been successfully engaged. He has personally accounted for six enemy aircraft, and by his consistent keenness and fearlessness he sets a fine example to the pilots in his squadron.

Lieut. (Temp. Capt.) J. I. T. JONES, M.M.—In 11 days this officer attacked and destroyed six enemy aeroplanes, displaying great courage, skill, and initiative.

Lieut. W. E. F. JONES.—On a recent occasion this officer carried out a comprehensive reconnaissance by night in heavy rain at a height of only 400 ft. He returned to his aerodrome in the face of a blinding storm, after a flight of three hours. He has carried out 64 night bombing raids. His courage and perseverance are exceptional.

Sec. Lieut. (Temp. Capt.) C. F. KING, M.C.—He is a fine leader, who at all times shows great gallantry and skill in manœuvring; his energy and keenness have brought his flight to a high standard of efficiency. He frequently descends to low altitudes to obtain good results from bombing and shooting, and on several occasions he has brought down enemy aeroplanes.

Lieut. (Temp. Capt.) S. M. KINKEAD, D.S.C.—A skilful and gallant leader, who has attacked enemy formations superior in numbers with marked success. In a recent engagement his patrol flew to the assistance of some of our machines which were greatly outnumbered by the enemy, and succeeded in accounting for three enemy machines and scattered the remainder.

Lieut. F. J. LAIN (late Border R.).—This officer has carried out 55 successful night bombing raids on enemy lines of communication, aerodromes, &c. His work in reconnaissance, at times under very adverse weather conditions, has been of the greatest value.

Lieut. (Temp. Capt.) W. C. LAMBERT.—He has destroyed six enemy machines and driven down four others out of control, displaying at all times dash and determination. On one occasion, when attacked by two Fokker biplanes, he drove down one, engaged the other at 20 yards' range, and crashed it to earth.

Capt. M. LE BLANC-SMITH.—A very efficient officer, and successful patrol leader, who, during the late operations, has done great execution in attacking ground targets. On a recent occasion he attacked five enemy aeroplanes, destroying one and driving down another out of control.

Lieut. W. H. LEETE.\*—A very successful observer, who has been instrumental in bringing our heavy artillery fire on numerous occasions on the enemy's positions, causing great destruction.

Capt. C. N. LOWE, M.C.—This officer has destroyed five enemy machines and driven down two others out of control. On one occasion he attacked two enemy triplanes, although at the time only one of his guns was serviceable; he shot down one of the machines in flames. On another occasion, while leading a formation of eight scouts he engaged a hostile formation of 26 machines. Having shot down a Fokker biplane he went to the assistance of one of our scouts and drove the enemy machine down to 500 ft.; at this low altitude half of a blade of his propeller was shot off by fire from the ground.

Lieut. F. R. MCCALL, M.C. (formerly Alberta R.).—This officer has driven down four enemy machines which were seen to crash, and two others out of control. His determination and tenacity in attack is remarkable. On one occasion whilst acting as escort to reconnaissance machines he shot down an enemy machine which attempted to interrupt their work; he was then attacked by three enemy scouts, which, however, he skilfully managed to elude.

Lieut. M. McCONVILLE, M.C. (late West Yorks R.).—This officer has carried out 62 bombing raids, flying at very low altitudes in the face of heavy anti-aircraft and machine-gun fire, being severely wounded on one occasion. Recently he carried out a reconnaissance under very trying conditions, heavy rain so obscured his vision that he was compelled to descend to within 500 ft. of the ground; aided by numerous flares and Very lights he completed his task in a most thorough manner.

Lieut. (Temp. Capt.) I. D. R. McDONALD, M.C.\*—A dash-ing fighting pilot. In the past two months he has destroyed five enemy machines and brought down two others out of control. At all times he shows a fine offensive spirit and complete disregard of danger.

Lieut. (Temp. Capt.) G. E. H. McELROY, M.C.—A brilliant fighting pilot who has destroyed 35 machines and three kite balloons to date. He had led many offensive patrols with marked success, never hesitating to engage the enemy regardless of their being on many occasions in superior numbers.

Under his dashing and skilful leadership his flight has largely contributed to the excellent record obtained by the squadron.

Lieut. A. MCGREGOR.\*—A most successful observer with marked initiative. During the past month he was engaged on one occasion at a pre-arranged height to range our artillery on an enemy aerodrome. The height was found to be too great owing to bad visibility, so he dropped to 7,000 ft., where he was met with intense enemy fire and was attacked by five enemy scouts, which he eventually succeeded in dispersing. Lieut. McGregor then brought our artillery into play successfully. Six weeks ago he was engaged on similar duty and succeeded in bringing our artillery fire on seven hostile batteries. He failed to get a reply from our artillery to deal with an eighth enemy battery, so he descended to 1,000 ft. and silenced it himself by machine-gun fire, after which he brought back a most valuable reconnaissance report.

Lieut. R. L. MANUEL (Australian Flying Corps).—During the past month, while on an offensive patrol, his machine was badly damaged in an encounter with an enemy aeroplane which he brought down out of control. On his return home he saw another enemy machine below him. At great personal risk, owing to the state of his machine, he nevertheless attacked and brought it down. He is a most skilful pilot of great determination.

Lieut. (Temp. Capt.) J. M. MASON, D.S.C.—A most gallant and determined leader who has carried out 92 successful bombing raids on enemy aerodromes, dumps, and communications, frequently opposed by fierce offensive action on the part of the enemy scouts and in face of intense anti-aircraft fire. He displays coolness in action and skill in leadership, and inspires all by his fine achievements.

Capt. G. J. C. MAXWELL, M.C.—This officer has at all times shown exceptional skill and gallantry and on numerous occasions has fought against greatly superior numbers. During the last six weeks he has brought down five enemy aeroplanes. Recently he approached unobserved to within 10 yards of three Fokker triplanes, one of which he shot down. He was chased for about nine miles by the remaining two until he met a formation of six Camels; these he led to attack some enemy aircraft, although he had only 25 minutes' petrol left.

Lieut. (Temp. Capt.) T. P. MIDDLETON.\*—During the past two months this officer has been very successful as a fighting pilot, destroying six enemy machines in that time, two of them being triplanes. On one of these occasions the formation to which Capt. Middleton belonged (consisting of nine machines) attacked 15 enemy aeroplanes, and this officer shot one of them down.

Sec. Lieut. (Hon. Lieut.) A. MILLS.\*—A capable and gallant observer who has been very successful in destroying enemy machines by reason of excellent marksmanship. He has accounted for many enemy aircraft in a short period of time, and has generally fought against larger formations than his own.

Sec. Lieut. W. NOBLE (formerly Essex R.).—A skilful and determined observer who has been most successful in destroying enemy machines, very often when in superior strength to his own formation.

Sec. Lieut. (Temp. Lieut.) W. O'REILLY-PATEY (formerly London R.).—This officer has on several occasions bombed trains and troops at night most successfully from very low altitudes; his courage and consistent good work have been an inspiring example to the squadron. On one occasion, having obtained two direct hits on a train from an altitude of 400 ft., he flew up and down firing at troops on the embankment with his machine-gun.

Lieut. C. PARRY.—This officer has taken part in 55 offensive patrols and several special missions, and has invariably shown great dash and gallantry. On one occasion he led his patrol to attack six Albatros scouts, and closed with them 3,000 ft. over their aerodrome; two enemy aeroplanes were destroyed, one by himself; he also forced another to land away from the aerodrome. He led his patrol safely out of the fight.

Lieut. (Temp. Capt.) A. A. N. PENTLAND, M.C.—A gallant flight commander, who in the last three months has destroyed two enemy machines, and driven down four out of control. Recently, whilst on special patrol, he single-handed, attacked four enemy aeroplanes; having driven down one out of control, he engaged the leader, damaged his engine, and compelled him to glide to his lines. One of the remaining machines followed his leader, but he attacked the other and drove it down in a steep dive.

Capt. R. C. PHILLIPPS, M.C. (Australian Flying Corps).—Whilst on offensive patrol this officer destroyed personally four enemy aeroplanes; he has also shown the greatest gallantry during the recent operations in attacking troops and



transports on the roads, and dropping bombs from very low altitudes.

Lieut. (Temp. Capt.) S. N. PIKE.\*—For conspicuous gallantry and skill in bombing by night the enemy line of communication, their aerodromes, and billets. He has seldom been frustrated from reaching his objective, even in most adverse weather conditions, and in face of strong enemy opposition.

Lieut. C. R. PITHEY.—When on reconnaissance 8,000 yards behind the enemy lines he saw a hostile balloon on the ground; descending to 1,700 ft., he and his observer engaged, and destroyed it. He then completed his reconnaissance. On another occasion, when on photography work, he was attacked by nine hostile scouts. By skilful manoeuvring he enabled his observer to shoot down three; the remaining six dispersed. He displays the greatest courage and determination in photographic and reconnaissance work.

Lieut. (Temp. Capt.) F. C. RANSLEY.—This officer displays conspicuous gallantry and skill. On a recent occasion, while on patrol, he was attacked by seven enemy scouts; he and his observer drove down two, and by skilful manoeuvring and dash he rallied his formation, which were being driven down, and succeeded in driving off the remaining enemy scouts. He has, in all, destroyed three hostile machines and driven down three others completely out of control.

Lieut. (Hon. Capt.) W. O. REDGATE.\*—On an occasion during the past two months when leading an offensive patrol of five machines he observed an enemy formation of 12 aeroplanes attacking another formation of our scouts. He at once led his patrol to the aid of our second patrol, and as he approached it two enemy scouts dived at him. By skilful piloting he placed himself behind one of these machines and, diving on it, drove it to destruction. Capt. Redgate has accounted for seven enemy machines in all, and displays enterprise and courage on all occasions.

Lieut. R. H. REECE.—As an observer to Capt. R. Halley in a long-distance night-bombing raid this officer rendered very valuable service in dropping bombs on a great enemy war factory (which caused explosions therein), being exposed to very intense anti-aircraft fire from the enemy's guns. Lieut. Reece has been engaged in 29 raids, and has displayed marked efficiency in this work.

Lieut. A. C. REID (formerly R.E.).—When engaging a column of infantry at a very low altitude this officer saw a hostile balloon on the ground. This he attacked and burnt. On the two following days he shot down two aeroplanes, and a few days later destroyed a third.

Sec. Lieut. H. RHODES.—As an observer this officer has shown marked ability, often under most difficult conditions. On one occasion when behind the enemy lines he saw a hostile balloon on the ground. He engaged and destroyed it from a height of 1,700 ft. On another occasion his machine was attacked by nine enemy scouts, which dived on the machine in pairs. He shot down three, one being seen to crash and two being brought down out of control. The remainder dispersed.

Sec. Lieut. A. W. ROBERTSON.—A very gallant and determined pilot. Whilst engaged in a long-distance bombing raid the formation of which this officer was acting leader was heavily attacked by hostile aircraft whilst over the objective. He took a leading and brilliant part in the action, and received a severe wound which paralysed his right arm. Despite this, he succeeded in flying home.

Lieut. (Temp. Capt.) H. L. ROUGH.—A keen and gallant officer possessing great skill and judgment. He has carried out 26 successful bombing raids and five photographic long-distance flights. On a recent occasion, when low bombing, having obtained a direct hit on a limber, he dived to 700 ft. and by skilful manoeuvring three enemy aeroplanes on the ground were set on fire, one by a direct hit with a bomb, and two by observer's fire. During the whole time his machine was subjected to heavy machine-gun fire. With the assistance of his observer, he brought his machine safely back, though he was shot through the leg.

Capt. R. H. RUSBY.\*—A patrol leader of great enterprise and courage. During the last six weeks he has destroyed five enemy machines, and previously he has destroyed an enemy kite balloon and a two-seater aeroplane.

Lieut. A. W. SAUNDERS.—A gallant and determined officer whose fighting spirit and enthusiasm has been a splendid example to his squadron. On one occasion whilst leading his formation of six machines, he attacked six enemy aeroplanes. Diving from 11,000 to 3,000 ft., he singled out a group of three, and shot down one. He then engaged the other two, which in their endeavour to get away collided and crashed.

Lieut. (Temp. Capt.) R. C. SAVERY.—This officer has taken part in many long-distance night bombing raids, attacking

enemy aerodromes at low altitudes in the face of severe fire from machine and anti-aircraft guns. On one occasion recently he bombed successfully an enemy machine which was on a searchlight flare-path in the aerodrome ground. Capt. Savery possesses initiative and resource in a high degree.

Sec. Lieut. (Hon. Lieut.) B. E. SCOTT, M.C. (late Canadian Field Artillery).—Whilst on counter-battery attack patrol, flying at a height of 1,500 ft., this officer's petrol tank was struck by machine-gun fire from the ground. As much petrol was escaping, he climbed out on the right wing and attempted to plug the hole, but finding he was unable to reach it, he returned to his seat for the spare "Cloche"; he then again climbed back to the tank and succeeded in plugging the hole. During the whole time he was under heavy anti-aircraft and machine-gun fire. The pilot then decided to carry on the patrol, and much valuable information was obtained.

Lieut. L. R. SHOEBOOTH.\*—A pilot of great skill, courage and determination. On one day within the past month he had been in the air for 4½ hours, and, on returning, learned that a long-distance bombing raid would take place that night. He immediately obtained permission to join in the raid, and was in the air for 5½ hours on this expedition—a total period of 10 hours flying in a 12-hour day. This officer has been successful on numerous occasions in bombing expeditions by night, and displays a fine spirit of perseverance in all difficulties.

Lieut. (Temp. Capt.) G. E. SIEDLE.\*—This officer has been engaged in 79 successful bombing raids on enemy dumps, lines of communication, railway junctions and aerodromes, and has always displayed skill and gallantry. Great damage has been done in these raids. On a recent occasion his machine was badly hit, nearly all the controls being damaged, as well as portions of the woodwork. Although stunned in this encounter, he managed to land skilfully in one of our aerodromes.

Lieut. (Temp. Capt.) T. L. SIMPSON (Australian Flying Corps).—An officer of exceptional ability, courage, and determination. He has directed our artillery fire on 40 occasions on hostile batteries, and has taken over 500 photographs of enemy positions. He was attacked by six triplanes on one occasion whilst engaged in photographing the enemy positions, and managed to hold his own until our scouts drove them off. Later, he was again attacked by a large enemy formation, but he skilfully out-maneuvred them. Recently, whilst on patrol, he located eight enemy batteries, upon which he directed a concentration of our artillery fire. On this occasion he was wounded by anti-aircraft fire whilst flying low.

Lieut. (Temp. Capt.) J. A. SLATER, M.C.\*—This officer has led numerous offensive patrols with the utmost skill and determination, and it is entirely due to his fine leadership that many enemy aircraft have been destroyed with the minimum of casualties to his formation.

Lieut. (T. Capt.) W. D. THOM.—A gallant and capable leader in long-distance night bombing raids, in 18 of which he has taken part during a period of six weeks. During the last raid his formation was attacked by 13 enemy machines, but he nevertheless managed to drop his bombs on his objective, direct hits being obtained; and he also succeeded in destroying an enemy aeroplane.

Capt. (T. Maj.) G. L. THOMSON, D.S.C.—This officer has carried out 340 hours' flying, and has taken part in 14 bombing raids. In one of the latter he led his formation to destroy a bridge over a canal he flew at a considerable altitude over the objective, watching each machine drop its bombs, and endeavoured to observe the results. After all his machines had completed the raid and departed for the lines, he glided down and passed over the bridge at 140 ft. altitude. In face of very severe machine gun fire, he crossed and re-crossed the objective in order to ascertain the results obtained. No material damage being apparent, he flew across it again at roof altitude, dropping his bombs in a final attempt to destroy the bridge. He is a fine leader, and the excellent spirit in his squadron is largely due to his personal example.

Lieut. (T. Capt.) J. TODD, M.C. (formerly No. 70 Squadron).—With four other officers he engaged 10 enemy scouts, shooting down one; later on the same day, he shot down another in flames. In addition to these, during the last two months he has shot down seven enemy machines. His gallantry in leading his flight into action against enemy patrols of superior numbers has been an inspiring example. (The announcement of award of Military Cross will appear in a later *Gazette*.)

Lieut. J. M. TODD (Observer).—This officer has taken part in eight successful long-distance bombing raids, displaying great courage and determination, combined with skill of very marked character. On one occasion his was the only machine



out of seven that reached the objective, which was successfully bombed.

Lieut. E. F. VAN DER RIET. This officer has taken part in 38 raids, showing consistent determination and skill. During one raid the formation of which he was the leader, was attacked when over the objective by 25 enemy aeroplanes, and a running fight ensued to our lines, a distance of 40 miles. By his skilful and resolute leadership he brought his formation back safely, destroying two enemy aeroplanes.

Lieut. C. J. VENTER.—During recent operations this officer shot down five enemy aeroplanes, one of which he followed down to 500 ft., when it was seen to fall. He is a bold and skilful airman.

Lieut. H. G. WATSON (Aus. F.C.).—Whilst on offensive patrol he encountered several Pfalz scouts, one of which he shot down. He has also in three weeks shot down four enemy machines, and destroyed a balloon, attacking the latter at 6,000 ft., following it down to 1,000 ft., when it burst into flames.

Lieut. D. J. WESTON.—A bold and skilful airman, who has accounted for six enemy machines. He has been generally engaged against superior numbers and always with success.

Lieut. (T. Capt.) A. H. WHISTLER.—A very courageous and enterprising patrol leader, who has rendered valuable services. He has done exceptionally good work in attacking ground targets, which he engages at very low altitudes. During the past month, his patrol attacked eight enemy scouts who were flying above him. He attacked a triplane and brought it down in a crash, and whilst thus engaged himself, another of his pilots destroyed a second enemy machine. The remainder of the enemy formation were then driven off.

Lieut. J. L. M. WHITE (late Can. M.G.C.).—This officer is distinguished for his bravery and dash in action, never hesitating to attack, regardless of the enemy's numerical superiority. He has destroyed three enemy aircraft and driven down two out of control. In addition he has carried out most valuable reconnaissance service at low altitudes.

Sec. Lieut. J. McK. YOUNG, D.S.M.—A gallant and enterprising bomb dropper, who has been engaged in 39 raids, with excellent results. Many direct hits were obtained in these raids, causing great explosions in enemy war factories and docks.

Capt. W. F. YOUNG\*.—A gallant, skilful and determined patrol leader. During the last few months he has destroyed five enemy machines, and previous to joining his present squadron he accounted for three more.

T. Lieut. G. H. HOBSON (formerly North'd Fus.), Lieut. T. Capt.) A. O. LEWIS-ROBERTS, 2nd Lieut. E. N. LOHMEYER, 2nd Lieut. G. N. SELLERS (formerly W. Yorks Regt.), Lieut. C. C. WHITE, Lieut. R. WILSON.—These officers carried out a night reconnaissance under exceptionally bad weather conditions, the clouds varying in height from 500 to 1,500 ft. A strong wind was blowing with heavy rainstorms. Owing to the low altitude, at which the reconnaissance was conducted, it was impossible to avoid searchlights, and they were subjected to heavy anti-aircraft fire. Under these conditions the successful completion of the reconnaissance was a most gallant effort on the part of the officers concerned, calling for courage, determination, and technical skill worthy of the highest praise.

Lieut. H. B. DAVIES, (Observer)\*, Lieut. N. N. YOUNG (Pilot)\*.—Whilst engaged during the past month on a bombing raid they observed a large amount of rolling stock at a railway siding. The pilot, Lieut. Young, brought his machine down to within 2,000 ft. from the ground after releasing his bombs, and Lieut. Davies then made an exhaustive reconnaissance of the area, notwithstanding an intense concentration of anti-aircraft and machine-gun fire which the enemy brought to bear upon the machine. Whilst engaged on this reconnaissance numerous groups of enemy troops engaged on the railway trucks were scattered in all directions by fire from the aeroplane. On completion of this duty these two officers located a very active enemy anti-aircraft battery, and immediately directed the attention of our artillery thereto, which resulted in silencing it, consequent on an explosion which followed a salvo. Courage, determination and ability are the marked qualities of these officers.

Lieut. J. M. GLAISHER,\* Lieut. G. A. KING, (Observer)\*.—While proceeding on a bombing raid last month these officers were attacked from behind by ten enemy scouts. The observer, Lieut. King, opened fire on their leader, who went down, diving vertically, his machine emitting black clouds of smoke. After some minutes further fighting, the pilot, Lieut. Glaisher, was able to fire a long burst at another of the enemy scouts, which fell out of control in the same plight as the first-mentioned. They then proceeded on their mission and dropped their bombs successfully. These officers have carried out

work of high merit in reconnoitring enemy trenches from low altitudes, regardless of personal risks, displaying a fine spirit of gallantry and determination.

NOTE.—The asterisk denotes that the announcement of the reward has been published in the *London Gazette* No. 30775, dated July 2nd, without the statement of service.

Awarded the Distinguished Service Order for gallantry and distinguished service in operations in Mesopotamia :—  
Maj. and T. Lieut.-Col. J. E. TENNANT, M.C. (formerly Bt. Maj., Scots Guards).

The following officers have been mentioned in dispatches and reports for distinguished services rendered :—

Lieut. (T. Capt.) P. LI. HUNTING (Mesopotamia).

Capt. L. M. LILLEY (Mesopotamia).

Lieut. (T. Capt.) A. B. SHEARER (formerly No. 3 Wing).

1st Lieut. S. R. SIMMONS, United States Air Service.—For very valuable services rendered on the occasion of a serious fire at an aerodrome.

## Air Force Cross.

Capt. (Hon. Maj.) R. M. HILL, M.C., Squadron Commander, Experimental Flight.

Capt. E. P. WILL, Seaplane Pilot.

## Military Medals for Brave Nurses.

It was announced in a supplement to the *London Gazette* of July 30th that the King has been pleased to approve of the award of the Military Medal to the following ladies for distinguished services in the field as recorded :—

Sister C. L. A. ROBINSON, A.R.R.C., Q.A.I.M.N.S.—For conspicuous devotion to duty and courage when a stationary hospital was struck by four bombs from an enemy aeroplane and one wing was practically cut in two, many patients being buried in the debris. Sister Robinson at very great personal risk went in amongst the ruins to assist in recovering the patients, quite regardless of danger, her one thought being the rescue of the patients. She displayed magnificent coolness and resource.

A.-Sister N. GALVIN, Q.A.I.M.N.S. (R.).—For bravery and devotion to duty during an enemy air raid, when four enemy bombs were dropped on the building occupied by the hospital, causing much damage to the ward in which Sister Galvin was on night duty. She remained in the ward attending to the sick, several of whom were wounded, and carried on her work as if nothing had happened. She displayed the greatest coolness and devotion to duty.

A.-Sister M. M. DE GUERIN, Q.A.I.M.N.S. (R.).—For bravery and devotion to duty during a hostile raid, when the building occupied by the hospital was hit by four bombs which cut in two the ward in which Sister Guerin was on night duty. Several patients were wounded and buried in the debris of the destroyed building, but she remained on duty in her ward, displaying the greatest coolness and courage in attending to the wounded and helping to rescue the buried.

Sister L. A. WILKINSON, Q.A.I.M.N.S. (R.).—For gallantry and devotion to duty during an enemy air raid, when, although her ward was demolished, she continued to attend to the wounded whilst the raid was still in progress.

Staff Nurse B. Dascombe, Q.A.I.M.N.S. (R.).—For gallantry and devotion to duty during an enemy air raid, when, her ward being destroyed by a bomb and herself wounded, she insisted on remaining at her post and attending to the wounded.

Sister (A.-Matron) L. M. M. TOLLER, R.R.C., Q.A.I.M.N.S.—For gallantry and devotion to duty during an enemy air raid. When the Sister's quarters were wrecked, and nurses wounded, Sister Toller collected the staff and placed them in comparative safety. By her fine example she undoubtedly saved life.

Staff Nurse A. M. McGRATH, Q.A.I.M.N.S. (R.).—For gallantry and devotion to duty during an enemy air raid, when in charge of a ward of serious cases. She showed throughout a quiet confidence and set a fine example during a most critical period.

Sister M. E. DAVIS, Q.A.I.M.N.S.—For gallantry and devotion to duty during an enemy air raid. When the Sister's quarters were wrecked, and bombs were falling, she showed a fine example and assisted materially in controlling the situation and attending to the sisters who were wounded.

Staff Nurse S. D. MUNROE, Q.A.I.M.N.S. (R.).—For gallantry and devotion to duty during an enemy air raid, which wrecked three of her wards. She showed coolness and contempt of danger and solicitude for her patients which was invaluable.

Staff Nurse K. R. LOWE, T.F.N.S.—For gallantry and devotion to duty when during an air raid bombs destroyed a large portion of the ward in which she was on night duty, wounding and burying many of the patients. She continued



to carry out her duties with great composure, and showed much resourcefulness in looking after the injured.

Miss M. THOMPSON, F.A.N.Y., Miss W. M. ELWES, F.A.N.Y., Miss E. A. COURTIS, F.A.N.Y., Miss M. RICHARDSON, F.A.N.Y., Miss M. O'CONNELL-BIANCONI, F.A.N.Y., Miss H. M. DICKINSON, F.A.N.Y., Miss E. B. CALLANDER, F.A.N.Y.—For conspicuous devotion to duty during a hostile air raid. All these lady drivers were out with their cars during the raid, picking up and in every way assisting the wounded and injured. They showed great bravery and coolness, and were an example to all ranks.

Miss K. M. FRESHFIELD, V.A.D.—For gallantry and devotion to duty during an enemy air raid. The ward in which she was working was destroyed by a bomb, but she continued to attend to her patients, and was herself very severely wounded.

Miss L. A. GREGORY, V.A.D.—For gallantry and devotion to duty during an enemy air raid. Her ward was destroyed by bombs, but she insisted on remaining at her post, and attended the wounded during the progress of the raid.

Miss K. FÄBLING, Miss S. DICKSON, Miss J. PENNELL, Miss M. DAVIDSON, B.R.C.S. (V.A.D.)—For conspicuous devotion to duty during a hostile air raid. All these lady drivers were out with their cars during the raid, picking up and in every way assisting the wounded and injured, and showed great bravery and coolness, and were an example to all ranks. They also carried to safety and helped in every way many French civilians.

Miss W. A. BRAMPTON, B.R.C.S.—For gallantry and devotion to duty during an enemy air raid. This lady continued at duty throughout the raid, although the ward in her charge was almost completely wrecked, several patients killed, and she herself was wounded.

Miss D. M. L. CREWDSON, B.R.C.S. (V.A.D.)—For gallantry and devotion to duty during an enemy air raid. Although herself wounded, this lady remained at duty and assisted in dressing the wounded patients.

Commandant W. E. S. MOUNT-BATTEN, B.R.C.S.—For gallantry and devotion to duty during an enemy air raid. She superintended the work of the convoy, drove an ambulance car herself during the raid, and by her coolness and disregard for her own safety, ensured the prompt removal of the wounded to hospital.

Sub-section Leader G. M. CUTHBERT, B.R.C.S.—For gallantry and devotion to duty during an enemy air raid. She showed exceptional coolness and courage in directing her section.

Section Leader G. F. JOHNSTON, B.R.C.S.—For gallantry and devotion to duty during an enemy air raid. She directed

her section with coolness and courage under very trying circumstances.

Senior Section Leader J. V. MELLOR, B.R.C.S.—For gallantry and devotion to duty during an enemy air raid. She showed exceptional courage and efficiency as senior section leader.

Nurse M. G. CAMPBELL, B.R.C.S.—For gallantry and devotion to duty during an enemy air raid, when buildings were set on fire. She moved about in full glare, regardless of imminent danger, taking patients to safety, and inspiring confidence in all.

V.A.D. M. CAYANAGH, St. John's Ambulance Brigade.—For gallantry and devotion to duty during an enemy air raid. Miss Cavanagh was in charge of four wards, two of which were entirely wrecked. She continued to perform her duty, and in addition was very active in removing the wounded to a place of comparative safety.

Nurse E. HOUNSLOW, A.R.R.C., St. John's Ambulance Brigade.—For conspicuous gallantry and devotion to duty during an enemy air raid. A bomb fell between two of her wards and injured many patients. She behaved with the utmost coolness, and set a fine example, attending wounded under most trying circumstances.

Asst. Matron M. CHITTOCK, St. John's Ambulance Brigade Hospital.—For gallantry and devotion to duty during an enemy air raid. She displayed great presence of mind, and instilled courage and confidence throughout a very trying time.

Matron C. E. TODD, St. John's Ambulance Brigade Hospital.—For gallantry and devotion to duty during an enemy air raid. She moved freely about the wards during the bombing, encouraging the sisters and patients, and displayed great bravery and presence of mind throughout.

Sister K. WARNER, St. John's Ambulance Brigade Hospital.—For gallantry and devotion to duty during an enemy air raid. She displayed the utmost coolness, and maintained a cheery spirit throughout, showing great bravery.

Sister J. BEMROSE, St. John's Ambulance Brigade Hospital.—For gallantry and devotion to duty during an enemy air raid. She showed disregard of danger, and continued to attend the wounded in her charge during the heavy bombardment.

Sister M. MCGINNIS, St. John's Ambulance Brigade Hospital.—For gallantry and devotion to duty during an enemy air raid. She showed great courage, took charge of a ward, and sustained her patients.

Sister M. H. BALLANCE, St. John's Ambulance Brigade Hospital.—For gallantry and devotion to duty during an enemy air raid. Her fortitude and courage were most conspicuous. She devoted herself entirely to her patients.



## THE ROLL OF HONOUR

(Where an Officer is seconded from the Army, his unit is shown in brackets.)

Published July 29th.

### Previously Missing, now reported Killed.

Fitzmaurice, Sec. Lt. A. H. (R.F.C.).	Oliver, Sec. Lt. F. L. (Som. L.I., attd. R.F.C.).
McCudden, Sec. Lieut. J. A., M.C. (R.F.C.).	

### Previously Missing, now reported Prisoner in German hands.

Pope, Lieut. A. D. (R.F.C.).

Published July 31st.

#### Killed.

Bullock, Lieut. G. E. (N. Staffs.).	McGregor, Lieut. D. M.
Claye, Lieut. C. G. (Sher. For.).	Peacock, Sec. Lt. J. T. (Durh. L.I.).
De Villiers, Lieut. D. J. J.	Rogers, Sec. Lieut. A. F.
Dowsett, Sec. Lieut. H. G.	Vaucour, Maj. A. M., M.C., D.F.C. (R.A.).
Gabell, Capt. D. R. C. (Glos.).	Weston, Sec. Lieut. J. E.
Grady, Sec. Lieut. J. F.	Williamson, Lieut. G. F. D. (Black Watch).
Higgins, Sec. Lieut. H.	
Lanigan, Sec. Lieut. W. L.	

#### Died of Wounds.

Allbutt, Lieut. H. F.	Ealand, Sec. Lieut. A. N.
Critchley, Sec. Lieut. B.	Redmond, Lieut. H. F.

#### Accidentally Killed.

Scovil, Lieut. E. M. (N. Bruns.).

#### Died.

Pollard, Sec. Lieut. W. W.

#### Missing, believed Drowned.

Packe, Lieut. R. C.

#### Wounded.

Boyden, P.F.O. R. H.	Owen, Lieut. W. T.
Bremner, Lieut. C. D. (Yeo.).	Rostedt, Sec. Lieut. N. E.
Connell, Sec. Lieut. R. F.	Smith, Lieut. T.
Hawkins, Lieut. L.	Sweetman, Sec. Lieut. C.
Haycock, Capt. H.	Townend, Sec. Lieut. H. C. H.
Kelly, Lieut. H. A.	Tyllyer, Sec. Lieut. J.
Landon, Lieut.-Col. J. H. A., D.S.O.	Wetherell, Capt. R. H. (North'd Fus.).
Lange, Lieut. O. J.	

#### Previously Missing, now reported Wounded and Prisoners.

Lawson, Sec. Lieut. R. G.	Russell, Sec. Lieut. D. J.
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#### Previously reported believed Wounded and Prisoner, now reported Wounded and Prisoner.

Hampton, Lieut. P. R.

#### Missing.

Ballance, Sec. Lieut. G.	Moir, Lieut. C. J.
Bingham, Lieut. A. E.	Moore, Lieut. A.
Body, Lieut. G. C.	Norden, Sec. Lt. W. G. (R.E.).
Cyr, Lt. A. J. (Can. For. Tps.).	Smith, Lieut. J. L.
Cobden, Lieut. F. P.	Turner, Sec. Lieut. E. G.
Ducray, Lieut. M. J.	Wildig, Sec. Lieut. N. H.
Graham, Sec. Lieut. G. W.	Wilson, Lieut. J. M.
Harston, Lieut. S.	Woodman, Sec. Lt. K. C. B.
McConchie, Lieut. T. L.	



## Previously Missing, now reported Prisoners.

Cowan, Lieut. W. E.      Reece, Sec. Lieut. S. B.  
Hunt, Sec. Lieut. K. P.

## Previously reported believed Prisoners, now reported Prisoners.

Birch, Lieut. S.      Bollins, Sec. Lt. A. V. (King's  
Hillyard, Sec. Lieut. V. W. H.      L'pool R.).

## Previously Missing, now reported Prisoner in German hands.

Eaton, Lieut. E. C. (Sask. R.).

*Published August 1st.*

### Killed.

Callaghan, Maj. J. C., M.C.      Kerruish, Lieut. E. F.  
Duncan, Sec. Lieut. R. R.      Moxey, Lieut. S.  
Harris, Lieut. S. E.      Webb, Lieut. P. F. H.  
Hewens, Lieut. F. A.

### Died of Wounds.

Armstrong, Lieut. G. P.

### Wounded.

Bowker, Lieut. R. C. S.      Sterling, Lieut. L. A., M.C.  
Bryan-Turner, Sec. Lt. A. O.      (R.F.A., (S.R.)).  
Dixon, Sec. Lieut. C.      Stuart, Lieut. J.  
Harman, Sec. Lieut. L. W.      Thompson, Sec. Lt. C. A. J.  
(R.F.A. (T.F.)).      (Ches.).  
Holden, Sec. Lieut. G.

## Previously reported believed Prisoner, now reported Wounded and Prisoner.

Taylor, Sec. Lieut. C. E.

## Previously Missing, now reported Prisoners.

Bull, Sec. Lieut. F. J.      Patenaude, Sec. Lieut. J.  
Law, Sec. Lt. C. B. (Hussars).      Smith, Lt. N. A. (Manch.).

## Previously reported believed Prisoners, now reported Prisoners.

Rainer, Sec. Lieut. G. A.      Scott-Kerr, Lt. W. F. (Loth.  
and Bord. Hse.).

## Previously Missing, now reported believed Prisoner.

Robins, Lieut. S. M.

*Published August 3rd.*

### Killed.

Austin, Sec. Lieut. E. V.      Harrison, Sec. Lieut. J.  
Calverley, Sec. Lieut. O. L.      Jeffrey, Lieut. H. G.  
Chester, Lieut. R. H. V.      Mallet, Sec. Lieut. R.  
Danby, Capt. C. D., M.C.      McLellan, Lieut. J. O.  
(R.E.).      Parsons, Lieut. E.  
Davidson, Lieut. J. T. G.      Partridge, Lieut. H. T. (Suss.).  
Dell-Clarke, Capt. G. C.      Stennett, Lieut. F. W.  
(L.N. Lances).      Thompson, Capt. C. R. J.  
Ford, Sec. Lieut. N. S. (R.W.  
Surr. R.).      Waite, Sec. Lieut. L. P.

## Previously Missing, now reported Killed.

Krohn, Sec. Lieut. E. O.      Hosking, Sec. Lieut. T. (Aus.  
(R.F.C.)).      F.C.)

### Died of Wounds.

Benton, Sec. Lieut. J. W.      Rayner, Lieut. A. S. (North-  
ants).

### Missing, believed Killed.

Grahame, Sec. Lieut. D. L.

### Wounded.

Anderson, Lieut. S.      Murphy, Lieut. C. W.  
Beith, Sec. Lieut. G. A.      Neary, Sec. Lieut. T. F.  
Biddlecombe, Lieut. C. E.      Posey, Lieut. C. A.  
Browne, Lieut. W. G. M.      Shaw, Sec. Lieut. F.  
Dance, Sec. Lieut. C. C.      Smith, Lieut. F. R., M.C.  
Harris, Sec. Lieut. F.      (Aus. F.C.).  
Hudson, Lieut. G. A. F.      Sutherland, Sec. Lieut. J. A.  
Line, Lieut. J. K.      Tarbolton, Lieut. J. S.  
Middleton, Lieut. C. W.      Williams, Lieut. K. L.  
Mobbs, Sec. Lt. C. G. (Nor-  
thants).      Wilson, Sec. Lieut. J. A.  
Winbolt, Sec. Lieut. R. J.

## Missing.

Ankrett, Sec. Lieut. H. H.      Hendry, Sec. Lieut. J. C. S.  
Arnott, Sec. Lieut. R. A.      Thomas, Sec. Lt. D. (S.  
Capes, Lieut. C. W.      Lanes.).  
Cook, Lieut. J. D.      Whitehead, Sec. Lieut. H. R.  
Dougall, Lieut. W. (Sask.).      Williams, Lieut. F. S.

*Published August 5th.*

### Killed.

Breakey, Lieut. H. L.      Homewood, Sec. Lieut. C.  
Carver, Lieut. R. C.      Pascoe, Lieut. C. W.  
Foggin, Sec. Lieut. G. W. D.

## Previously Missing, now reported Killed.

Barry, Lt. O. C. (Aus. F.C.).      Nowland, Lt. G. (Aus. F.C.).  
Finnie, Sec. Lt. A. (Aus. F.C.).

### Died of Wounds.

Pausch, Sec. Lieut. A. W.

### Died.

Walker, Sec. Lieut. H. H.

### Wounded.

Burley, Sec. Lt. L. E. T. (Dur.      Hall, Lieut. R. T.  
L.I.).      Howe, Lieut. P. F. C.  
Cowden, Sec. Lieut. W.      Palmer, Sec. Lieut. H. H.  
Dodds, Sec. Lieut. C. W.      Walkerdine, Lieut. B. A.  
Foster, Sec. Lieut. F. H.      Wheeler, Sec. Lieut. D. (Oxf.  
Gurdon, Lieut. J. E.      and Bucks L.I.).

## Previously Missing, now reported Wounded and Prisoner.

Breckenridge, Sec. Lieut. W.

## Previously Missing, now reported believed Wounded and Prisoners.

Drew-Brook, Sec. Lieut. T. G.      Milani, Sec. Lieut. R. S.

### Missing.

Barrett, Sec. Lieut. B. N.      Gray, Sec. Lieut. R. H.  
Burn, Sec. Lieut. J. S.      Mallett, Sec. Lieut. D.  
Church, Sec. Lieut. F. J.      Simons, Sec. Lieut. A. T.  
Gilman, Lieut. W.

### Prisoner.

Morse, Lieut. T. W.

## Previously Missing, now reported Prisoners.

Andrew, Sec. Lieut. W. L.      Magee, Sec. Lieut. E. A.  
Cross, Sec. Lieut. A. S.      Peat, Sec. Lieut. R. W.  
Fellowes, Lt.-Col. P. F. M.,      Townsend, Sec. Lieut. H. E.  
D.S.O.

## Previously Missing, now reported believed Prisoners.

Clarke, Sec. Lieut. H. A.      Robson, Lieut. C. C., M.C.

**Correction:** Previously Missing, now reported Killed.  
Fitzmaurice, Sec. Lieut. A. H. (R.F.C.), should read Fitz-  
maurice, Lieut. A. H.

*Published August 6th.*

### Killed.

Blount, Sec. Lt. J. H. (Oxf.      Jones, Sec. Lt. P. G. (R.E.).  
and Bucks L.I.).      Lewis, Sec. Lieut. M. B.  
Cowan, Sec. Lieut. A. A.      Simms, Capt. A. L., D.S.C.  
Currie, Sec. Lieut. W. H.      Whitlock, Lieut. C. R.

### Died.

Fraser, Sec. Lieut. M.      Prance, Sec. Lieut. J. E.

### Wounded.

Brown, Capt. A. R.      Moore, Sec. Lieut. E. R.  
Colman, Sec. Lieut. C. W. T.      Nordberg, Lieut. E. (A.S.C.).  
(C. Gds.).      Saunders, Sec. Lieut. S. J.  
Ford, Sec. Lieut. L. S.      Soutar, Sec. Lieut. G. R. C.  
Harper, Sec. Lieut. W. E.      Spranklin, Sec. Lieut. W. A.

### Missing.

Ankers, Sec. Lieut. J.      Pegram, Sec. Lieut. J. A. H.  
Ashfield, Lieut. L. A.      Pugh, Lieut. J. A.  
Bosher, Lieut. H.      Strang, Lieut. A. R. (R.F.A.).  
Dawson, Lieut. W.      Thrower, Sec. Lieut. L. A.  
English, Lieut. M. G.      Vowles, Lieut. J. A. E.

## Previously Missing, now reported Prisoner in German hands.

Irvine, Sec. Lieut. W. M. (Northd. F. and R.F.C.).



## No British-Dutch Aerial Post.

It was announced by the Dutch Director-General of Posts and Telegraphs on July 29th that fresh negotiations had been opened with the British Government with the object of arranging aerial postal services between Holland and Great Britain. The Amsterdam *Telegraaf* learns, however, that the British authorities have refused to admit postal aeroplanes to Great Britain.

## America's Effort.

A STATEMENT issued by nine members of the U.S. Congress now in England investigating war conditions says that America is now building more than 25,000 aeroplanes, and there are in the United States alone more than 100,000 airmen. Already more than 500 American battleplanes have been shipped to Europe, with 500 additional engines. Battleplanes are now being delivered at the rate of 80 a week.



# THE PFALZ SINGLE-SEATER FIGHTER.

160 H.P. MERCEDES ENGINE.

(Continued from page 856.)

THE seating accommodation of the Pfalz does not present any special features, except, perhaps, that the pilot's cockpit is quite roomy considering the area of the cross section at this point. This is, of course, a consequence of the peculiar body construction, which leaves, for a given cross section, more space inside than is possible when employing the girder type fuselage with rectangular main structure and the fairings added afterwards. Thus, in the case of a circular cross section, for a diameter of 3 ft. the inscribed square is only about

rests on a transverse member supported on a small false former slightly farther aft. Needless to say the pilot is equipped with a safety belt, which in the Pfalz is in the form of web-

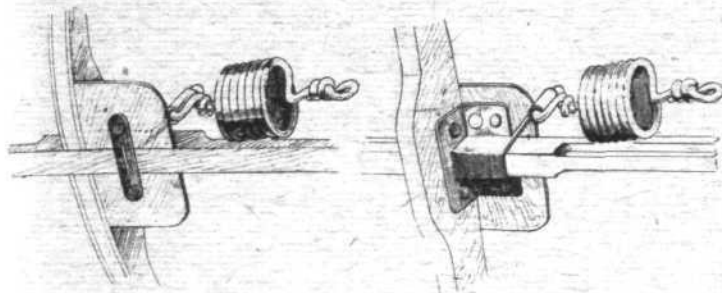


Fig. 9.—Sketches showing safety-belt attachment on the Pfalz.

2 ft., while with the *monocoque* construction the whole circle is available for the accommodation of the pilot. This is another way of saying that the cross sectional area of a body of rounded section can be kept smaller with *monocoque* construction than with girder-cum-fairing construction, resulting in lower head resistance.

The seating itself is of the usual type, and was indicated in Figs. 1 and 4 of our July 25th issue. The front edge of the seat is supported on the sloping former, while the rear of the seat

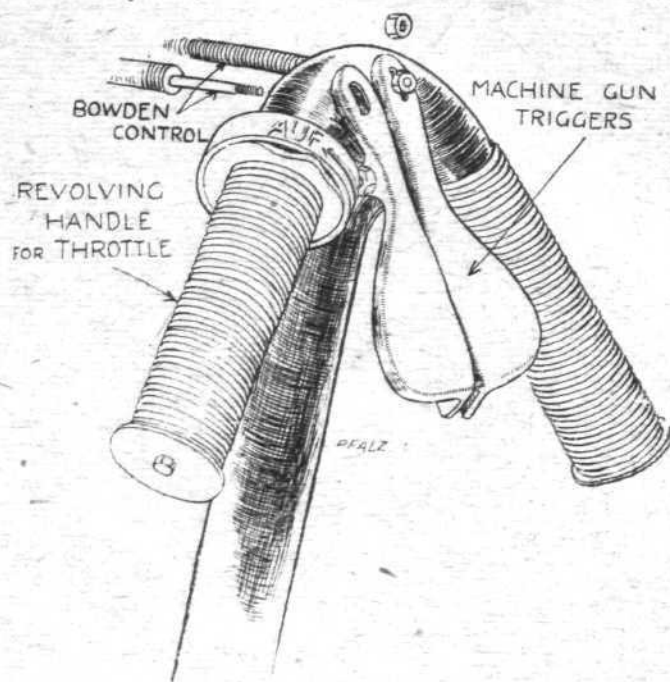


Fig. 11.—The control handle of the Pfalz biplane. The left-hand handle is rotatable, and operates the throttle via Bowden cable.

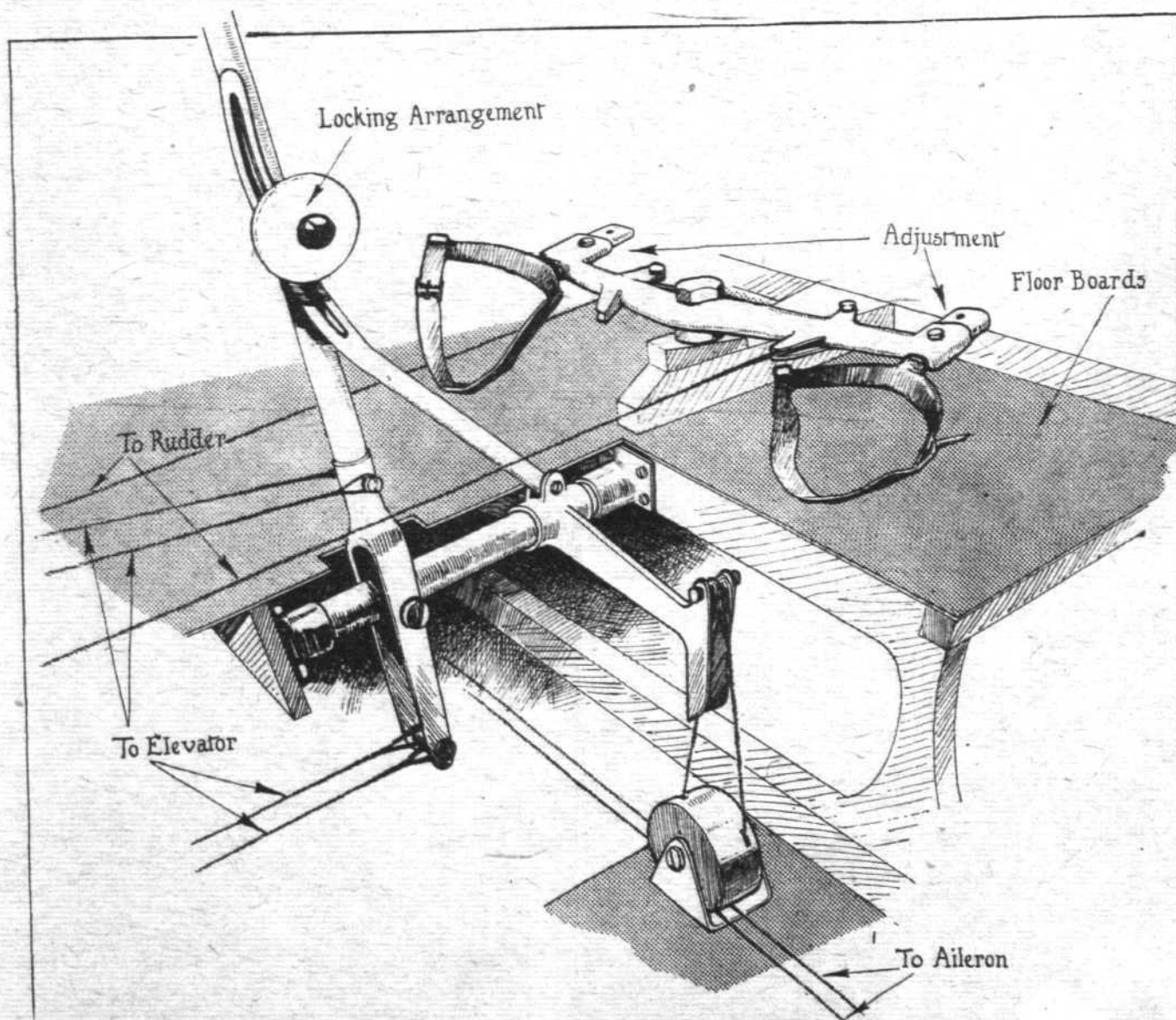


Fig. 10.—Perspective drawing of the Pfalz controls. Note the adjustable foot-bar arrangement.



bing, attached as shown in Fig. 9, to the longerons via a short length of coil spring.

The Pfalz controls are shown in Fig. 10. A tubular control lever, forked at its lower end, is attached to a longitudinal rocking-shaft, which carries at its front end the transverse cranks for the aileron controls. In connection with these it should be remembered that ailerons are fitted to the top plane only, hence two cables pass from each end of the crank and around pulleys, one of them being what might be termed the positive cable, running through the lower plane, over pulleys, and to the aileron crank; the other being the return or equalising cable running across the body through the opposite lower plane, over a pulley, and to the opposite aileron.

As is now general practice, means are provided for locking the elevator in any desired position. The manner of doing this in the Pfalz will be evident from an inspection of Fig. 10. The collar carrying the aileron control cranks has welded to it a vertical forked lug, a bolt through which forms the pivot for a hinged stay rod, terminating at the top in a flat, curved, slotted strip, which may be locked in any position by means of a locking disc of aluminium. At its upper end the control column has welded to it two handles, bound with cord, of which the left is rotatable and operates the throttle much after the fashion of a motor cycle. Centrally placed are two

Fig. 13.—Sketch showing the nose of the Pfalz body, with "spinner," air scoops and inspection doors.

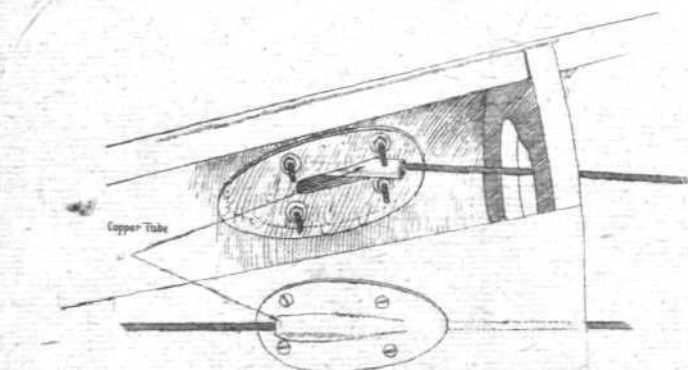
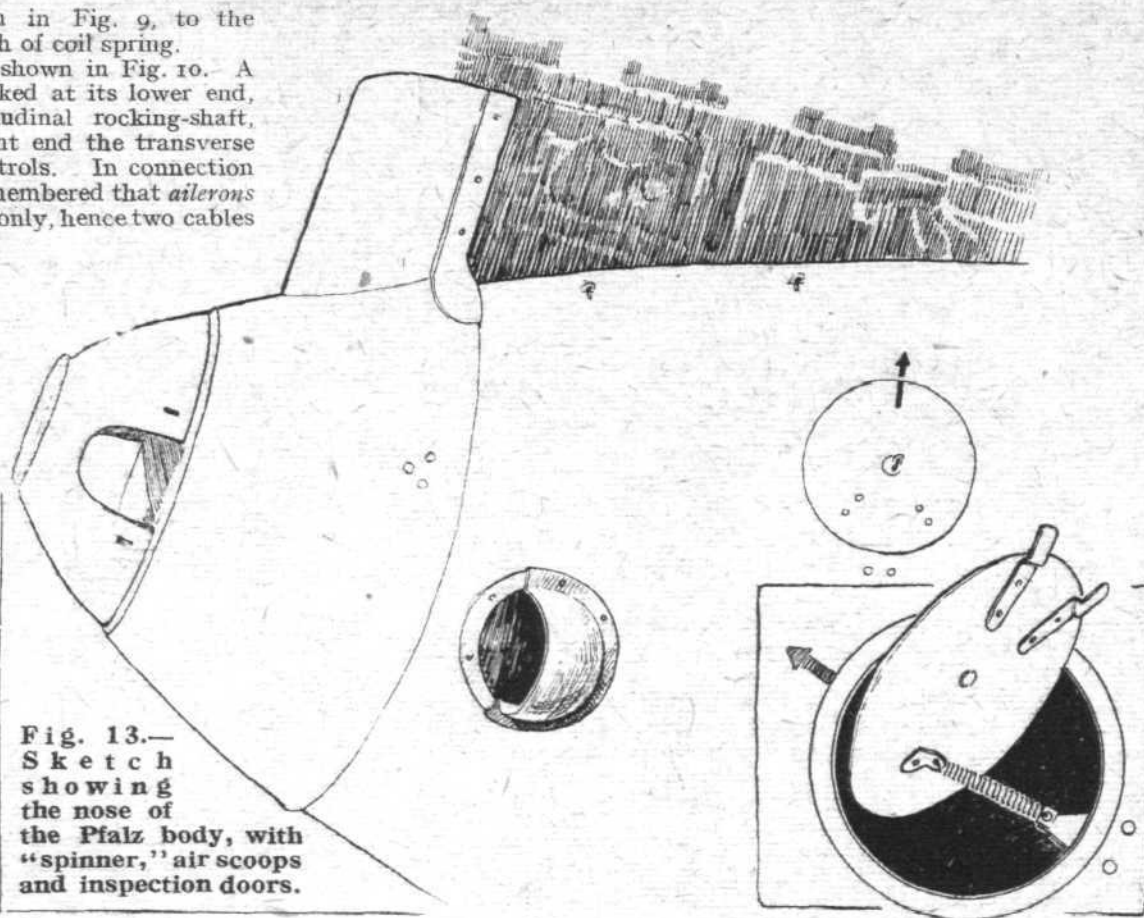


Fig. 12.—Guide tubes for the rudder and elevator control cables of the Pfalz biplane.

triggers operating the two synchronised machine guns via Bowden cables. The handle is shown in Fig. 11. This sketch, it may be pointed out, has been drawn from the port side in order to better show the twisting handle, while the general sketch of the controls is drawn as seen from the starboard side.

The rudder bar of the Pfalz presents some rather unusual features. Thus the rudder cables are anchored to forked lugs on the front of the foot bar, through which they pass, and issue from the rear of the bar through channel section guides which act, when the foot bar is moved to the extremity of its travel, as quadrants for the cables. The object of this rather complicated arrangement is not clear unless it has been done in order to get the forked lugs working in compression instead of in tension. The foot rests are in the form of flat forks inserted in sockets in the foot bar and provided with adjustment for length to suit individual pilots.

Where the rudder and elevator cables issue from the interior of the body they pass through small sheet steel plates carrying a steel tube fitted with a copper tube liner to protect the cables against wear. Internal and external views of one of these fittings are shown in Fig. 12.

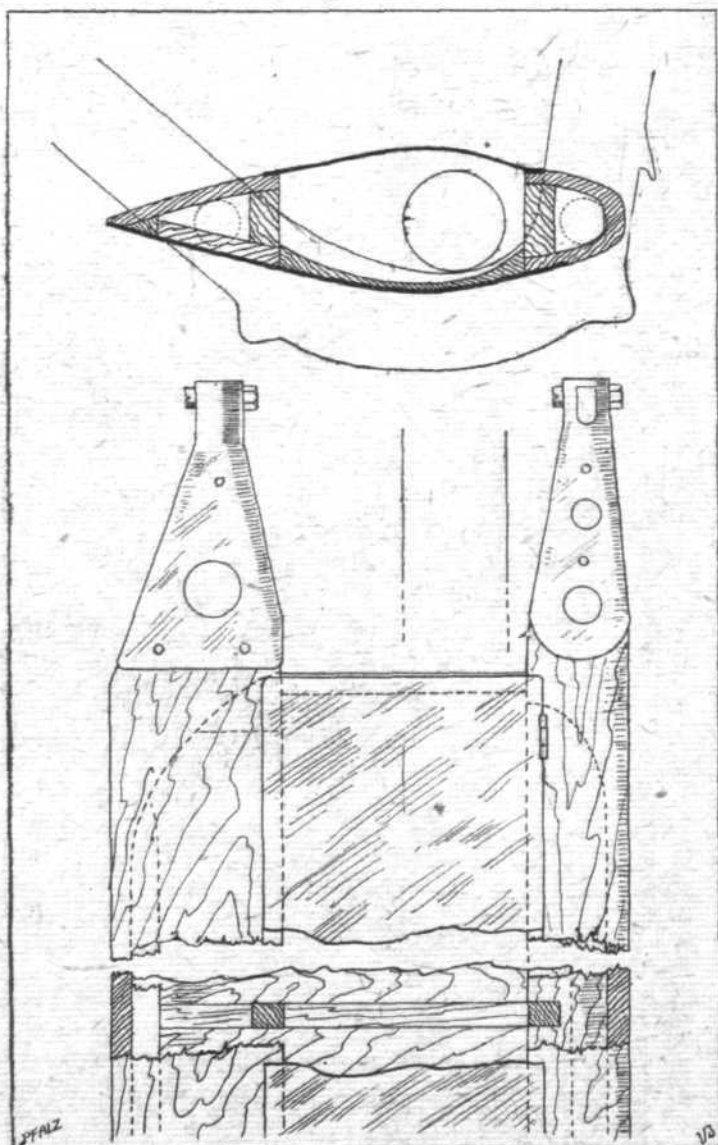


Fig. 14.—Sectional view of the stream-lining of the axle on the Pfalz biplane.



The engine a 160 h.p. Mercedes is mounted in the nose of the body on two longitudinal bearers supported by four main formers. The details of the mounting do not call for any comment, and the general arrangement of the engine mounting will be sufficiently clear from Figs. 1 and 4. The main petrol tank is carried in the bottom of the body, resting on the spar roots of the lower plane built into the body as a permanent fixture. The usual hand-operated pressure pump and an engine-driven pump are provided for forcing the petrol from the main tank up into the service tank built into the top plane. The oil tank is carried by the side of the engine. The nose of the machine is rounded off, and terminates in a "spinner" fitted over the propeller boss, thus forming a very smooth entry for the air. Near the nose of the machine there are two scoops, that on the port side carrying air into the

transmitted from this strut *via* the bracket to the fixed rear spar and its former, and to the sloping former surrounding the pilot's seat. The upper ends of the front struts are welded to elongated base plates of heavy gauge, which serve as lugs for the chassis bracing cables. In order to distribute landing shocks over a larger area a steel band is passed underneath the bottom of the body, so that the whole bottom part of the former to which the struts are attached rests in the loop of this strap. The arrangement is illustrated in Fig. 15.

The apices of the chassis Vees are connected by two cross struts, one in front and one behind the axle. As a matter of fact it is hardly correct to term the rear one a strut in the ordinary sense of the word, as it consists of short lengths of solid wood tapered to fit the steel-socket attaching it to the chassis struts, the remainder of its length being made up of a

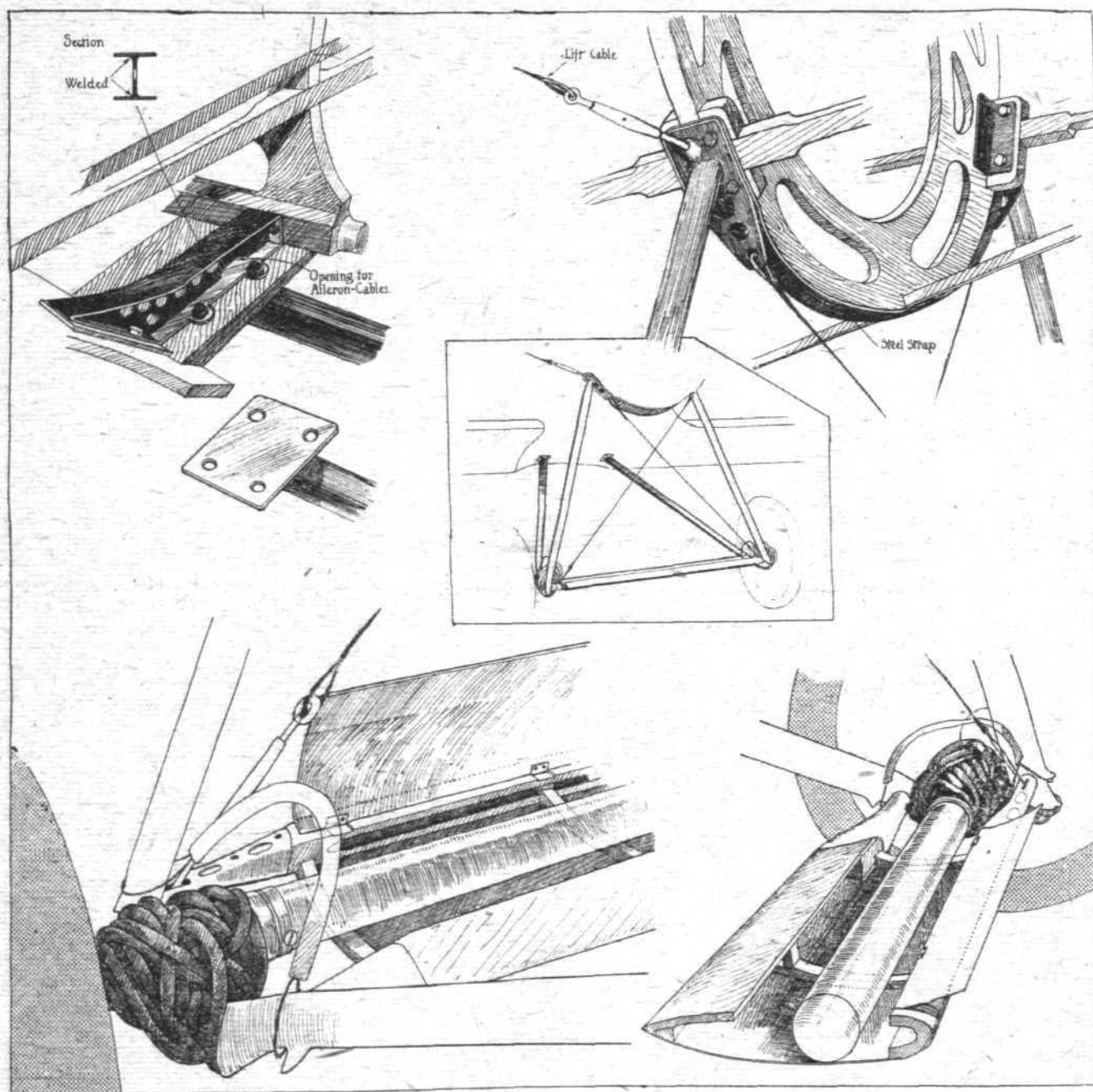


Fig. 15.—Details of the Pfalz undercarriage. In the centre a general view of the undercarriage.

engine housing, while the scoop on the starboard side has a tube running to an opening in the crank case, which is ventilated by this means. These features, as well as the neat inspection doors provided in convenient places on the front part of the body, are shown in Fig. 13. The sketches are, we think, self-explanatory.

The undercarriage is of the Vee type, with struts of stream line section steel tube. The struts look somewhat spidery, being of rather small dimensions as regards their section. The major axis of the section is 48 mm., and the maximum thickness of the strut, occurring fairly far back, is 30 mm. The fineness ratio is therefore very low. The attachment of the chassis struts to the body is of interest. The rear struts are bolted, as shown in detail in Fig. 15, to an I section steel bracket built into the wing roots on the body. Thus the landing shocks are

thin strip of wood forming the top surface of the trailing edge, while its bottom surface is in the form of a sheet of three-ply passing under the axle to the front cross strut. The latter is a wood strut spindled out to a "D" section, and tapered at the ends to fit the tapered steel sockets which connect it by means of bolts to the chassis struts. The top of the stream-line casing around the axle thus formed is a hinged lid of aluminium, which, as the axle moves up and down when the machine is running along the ground, opens and closes, lying of course, snugly against the rear cross strut when the axle is relieved of its load as the machine leaves the ground, thus forming a good stream-line section with, it is to be presumed, a fairly low head resistance. Cross bracing of the chassis is in the front bay of the struts only, and is in the form of stout stranded cable. As in the case of the wing cables, no



stream-lining has been attempted, a feature fairly typical of even modern German machines.

The shock absorbers are in the form of cords which as regards outward appearance might easily be mistaken for rubber cord, but which on closer examination, are found to be spiral springs, one inside the other, enclosed in a woven cover similar to those employed for covering stranded rubber cords. These springs are wrapped around the apex of the chassis Vee and around the axle, and are prevented from slipping up along

the chassis struts by lugs welded to the struts. Two lugs higher up serve as anchorage for the short loop of stranded cable which limits the travel of the axle. This length of cable is enclosed in a cover, as shown in Fig. 15, to protect it against wear. The tubular axle is a fairly large diameter—55 mm., to be exact; but we have not been able to ascertain of what gauge the tube is made. The details of the undercarriage are shown in the perspective sketches of Fig. 15 and in section in Fig. 14.

(To be continued.)



### Casualties.

Capt. EDWARD MARCH LUGARD, Royal Lancs. R. and R.A.F., who was killed as the result of a flying accident on July 30th, was the son of Mr. and Mrs. Cecil Lugard. Educated at Rossall, he entered Sandhurst at the end of August, 1914, and from there received his commission in November, 1914, and served with his regiment at the front. Early in 1916, he joined the R.F.C., and being speedily promoted to captain, saw a considerable amount of service in France as flight commander.

2nd Lieut. ARTHUR FORBES ROGERS, R.A.F., who was killed on July 16th, was the son of Mr. and Mrs. Arthur Raleigh Rogers, of 6, Ulundi Road, Blackheath. He joined the Artists' Rifles when he was 17, and entered the R.F.C. in February of last year, becoming a qualified pilot in the following August. He was 19½ years of age.

Capt. OWEN SCHOLTE, M.C., R.A.F., who was killed on July 30th, was the second son of Mr. and Mrs. Scholte, Sunnyfield, West Heath, Hampstead.

Flight-Lieut. WILLIAM H. TELFER, R.A.F., son of Mr. and Mrs. Telfer, Osborne Road, Newcastle, has been killed. He was educated at Dame Allan's School, Newcastle. Before joining the Air Force he was employed in the aeronautical engineering department of Armstrong, Whitworth and Co.'s works. He was a keen lover of manly sports, and excelled in cricket and football.

Major AWDRY MORRIS VAUCOUR, M.C., D.F.C., R.A. and R.A.F., was killed in action in Italy on July 16th. He held a commission in the Royal Artillery, which he joined at the outbreak of war, but early in 1915 was transferred to the R.F.C., and in September of that year was awarded the Military Cross for a very dangerous reconnaissance which he successfully carried out at Loos under very heavy fire. He won the bar to it in 1916 on the Somme. Subsequently, when commanding his squadron in Italy, he was awarded the Distinguished Flying Cross and the Italian Silver Medal for valour, and was several times mentioned in despatches.

Lieut. EWART AUSTIN BOURCHIER WIMBUSH, R.A.F., was the only son of the late John Bouchier Wimbush, of Rothwell, Yorkshire, and Maud Howland Jackson, of Ringwood. He was educated at Stubbington House, Durlston Court, and in H.M.S. Worcester. At the age of 17, when the war broke out, he obtained a commission in the R.N.V.R., and after completing the usual course of gunnery in H.M.S. *Excellent*, he was appointed to the *Tipperary*, but was on sick leave when the *Tipperary* went down in the Battle of Jutland, and he was then appointed to the *Carysfort*, in which he served until he volunteered for the R.N.A.S. in 1917. After training he was sent to the Eastern Mediterranean where he took part in the bombing of the *Goeben*. He met his death in a duel over the enemy lines while on a reconnaissance on May 23rd, his 21st birthday. The King had conferred on Lieut. Wimbush the Distinguished Flying Cross.

Sec. Lieut. JOHN HILLIER BLOUNT, Oxford and Bucks L.I. and R.A.F., who died of injuries received in a flying accident on July 6th, was the second son of the late Maj. C. H. Blount, R.A., and Mrs. Blount, of Felixstowe. He was born at Ipswich in 1899, and was educated at St. Andrew's, Southborough, and Harrow, where he was in Mr. Graham's house. From Harrow he went to Sandhurst, and from there received his commission in the Oxford and Bucks L.I., being shortly afterwards seconded to the R.A.F. He showed much promise as a scout pilot.

Maj. C. E. BRISLEY, R.A.F., late R.N.A.S., was killed whilst flying in England, on July 30th. He leaves a widow.

Lieut. GEORGE F. DELMAR-WILLIAMSON, who was accidentally killed while flying over Wiltshire on July 12th, was the only son of Mr. and Mrs. Delmar-Williamson, of Cheltenham, and was educated at Glyngarth School and Cheltenham College. He passed out of Sandhurst in 1916, and received a commission in the Black Watch. Being attached to the R.A.F., he gained his wings, and subsequently served at the front, being much commended for his reconnaissance and photographic work and promoted to temporary rank of captain. Invalided home with concussion in September, 1917, he was on recovery appointed an instructor at a Wiltshire aerodrome. He was only 19 years of age.

Sec. Lieut. GEORGE E. HUNT, K.O.Y.L.I., attached R.A.F., who was accidentally killed in Wiltshire on July 21st, was the only son of the late C. E. Hunt, Esq., of Redcar, and Mrs. T. J. Dickson, "Glenroyd," Marton.

### Married.

Capt. MAURICE CHARLES BREESE, R.A.F., elder son of Mr. and Mrs. Charles Breese, of Streatham, was married on July 31st, at St. Mark's, Surbiton, to CLARE MAY LOCKE, youngest daughter of the late Edward Locke and Mrs. E. W. Crickmay, of The Nook, Catherine Road, Surbiton.

Lieutenant JOHN NORMAN KING LE FLEMING SHEPHERD, R.A.F., youngest son of Dr. and Mrs. Richard le Fleming Shepherd, of Saltford, Bath, grandson of Sir Richard le Fleming, Bart., of Rydal, was married on July 31st at St. Mary's Church, Finchley, to JOYCE GUY, youngest daughter of Mr. and Mrs. Richard J. Guy, Gherbari, Dollis Park, Finchley, N. (late of Calcutta).

Lieutenant WILLIAM SOMERVILLE, R.A.F., son of W. RENWICK, of Langarth, Stirling, was married on July 31st at Holy Trinity Church, Sloane Street, to JOAN LESLY, daughter of the late Langton G. Bayly and Mrs. Bayly, of 5, Droitwich Road, Worcester.

### To be Married.

A marriage will shortly take place between Lieut. HAROLD BARNINGHAM, R.A.F., youngest son of the late William Barningham, and Mrs. Barningham, Calcot Rise, Reading, and PHYLLIS, eldest daughter of Major and Mrs. ARTHUR OSBORN, 11, Selwood Place, S.W.

The engagement is announced between Capt. JOHN HAMMERSLEY-HEENAN, R.A.F., eldest son of Mr. and Mrs. R. H. Hammersley-Heenan, of Hampstead, and LINLEY, youngest daughter of Mr. and Mrs. SYDNEY JESSOP ROBINSON, of Sheffield.

The engagement is announced of Lieutenant DOUGLAS M. MURDOCH, R.A.F., younger son of Mr. H. G. Murdoch, of Plympton, S. Devon, and MARGARET AMY, daughter of Mr. and Mrs. H. I. MACCARTHY, of Bothwell, Tasmania.

The engagement is announced between JACK G. WYNNE-WILLIAMS, R.A.F., eldest son of Mr. and Mrs. Wynne-Williams, of Bodwyn, Carnarvon, North Wales, and YVONNE, only daughter of the late FRANK STEWART BARNARD and Mrs. Barnard, of The Wilderness, Earley, Berks, and Bryn Brass Castle, North Wales.

### Items.

It was announced in the *Court Circular* that the King received the LORD WEIR (Secretary of State for the R.A.F.) in audience at Buckingham Palace on the morning of August 3rd.

The will of Acting Flight Commander MILES JEFFERY GAINES DAY, R.N., of Rhiola, St. Ives, Hunts, who was killed on February 27th, a bachelor and intestate, has been proved at £57,934.



# IRISMS FROM THE FOUR WINDS

SIGNOR CAPRONI is ever more optimistic of aviation being the deciding factor in the world's conflagration. Through the *Echo de Paris*, he again voices his opinion thus: "We shall owe to aviation the final success of the war, above all to our bombarding machines, which have been the most effective of the technical novelties in the air service, if only the efforts of the Entente both in future expeditions and in the construction of machines are carried out with proper co-ordination and in perfect harmony. War has always been ended by the introduction of some new technical engine. Thus the bombarding machine will end this war."

ANOTHER little souvenir which might well be quoted side by side in the same "Daddy-what-did-you-do-to-help-the-Huns-to-win-the-war" frame of the munition strikers which was suggested a fortnight or so ago as a striking adornment of the walls of the ancestral homes of these opulent "skilled" workers, is the following open letter from a batch of wounded heroes which they addressed to the press upon the action of those who were out to "down tools" to help the Huns:—

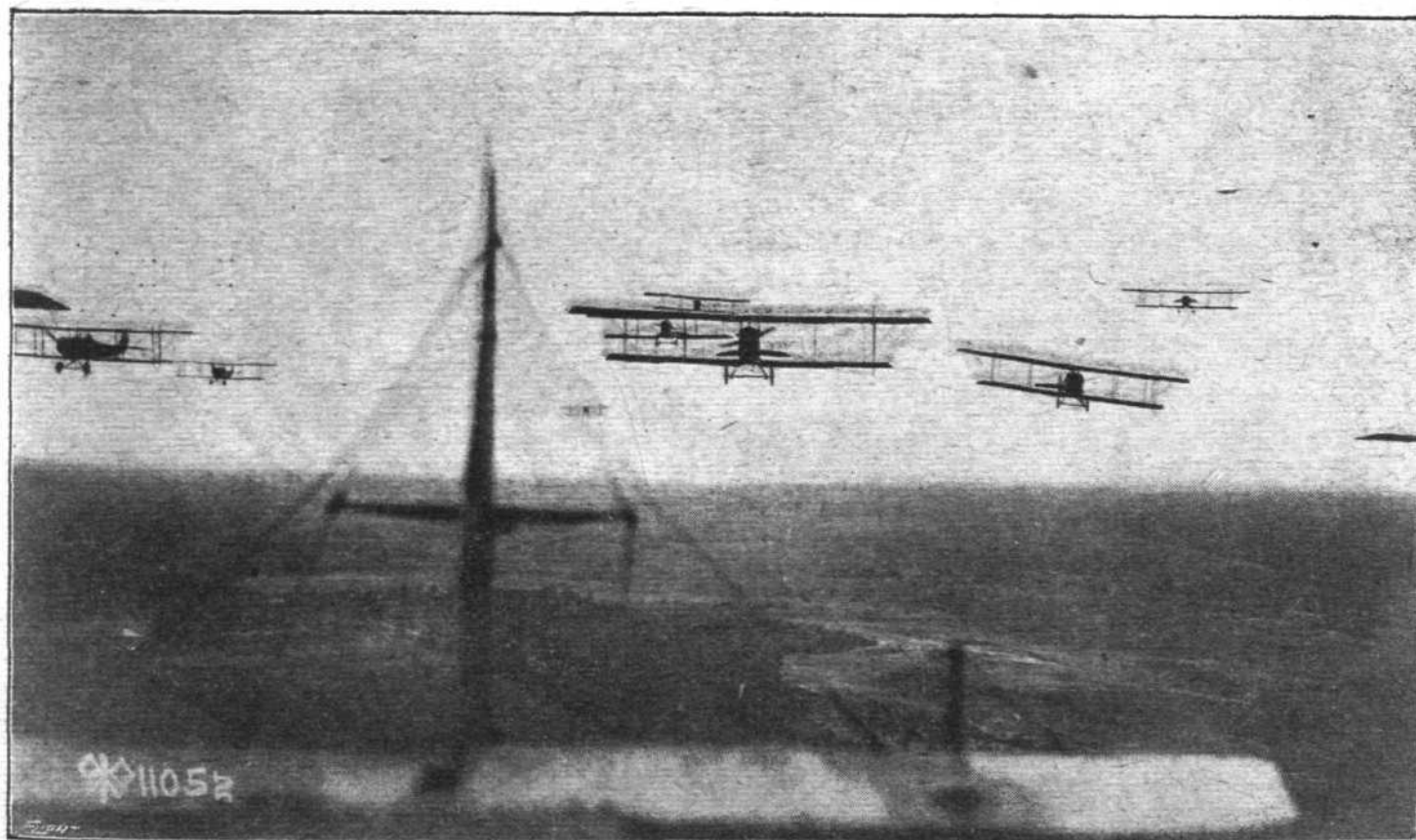
"May we, on behalf of the patients of Queen Mary's Convalescent Auxiliary Hospital, venture on your valuable space to express our indignation and disgust at the action of those men who, either through a misconception of the case, or as the result of speeches made by those who constantly seek to comfort the enemy, are now on strike at Coventry, Birmingham, and other places? In this hospital there are now some 800 men (15,000 have already been fitted with artificial limbs and discharged), each one of whom has lost at least one limb, some have lost three, fighting that our land may be spared the horrors of invasion. Can the strikers really know that by their action they are nullifying the efforts and sacrifices these men have made, and helping to swell the all-too-long list of men awaiting artificial limbs? In the days to come will the strikers meet a maimed or disabled man without the terrible feeling that in spirit, if not in actual fact, they contributed to that disablement? While holding no brief for the Government, we cannot but feel that it is the duty of every citizen to loyally support them in everything they do towards a more

efficient prosecution of the war. First avenge those who so cheerfully have made the great sacrifice, then we can settle those home grievances which are insignificant beside the greater issues at stake. Get on with the war, play the game right out, and settle accounts at home afterwards, or may be, there will be no afterwards for England.—H. Lawrence, Sergt., 1st Leic. Regt.; J. Postlethwaite, Pte., King's Own R.L.; H. Watson, Pte., West Yorks.; H. Ellis, Pte., West Yorks.; A. G. Thomas, Pte., 8th Hants.; W. Roberts, Pte., 8th Gos.; J. W. Cawthorne, Corpl., 70th Lab. Coy., Ward 4, Queen Mary's Convalescent Auxiliary Hospital, Roehampton House, Roehampton, S.W. 15, July 28th."

AN ounce of fact is more convincing than several tons of theoretical forecasts. On Tuesday of last week, Maj.-Gen. Davidson, who has been elected for the Fareham Division in place of Lord Lee, left General Headquarters in France, came to England, by aeroplane, motored from his landing-place to Westminster, took the oath, and sat in the House for a little while. Then he travelled back as he had come, and was probably on duty again while Parliament was still talking about national shipyards. His desire was to take his seat before the recess, and as he could get only a few hours off, it was the only way—*via* the air. Within a year or so similar journeys will not even be noticed. They will be as a matter of course in the daily routine of most busy men.

AGAIN, General Brancker, out in America last week, had to be at a luncheon given by Mr. Geoffrey Butler of the British War Mission. Again, owing to General Brancker's varied engagements, the only way was *via* the air, and so he made his trip from the Aviation field at Long Island, to New York, to attend the function.

WHAT the beneficent rule of the Blonde Beast, which the strikers appear to wish to invite, would mean to the English-speaking Bolsheviks—we refrain from calling them Britons—and to their first, in between, and last borns, may perhaps be faintly gleaned from the most recent news of the terrible plight of Roumania as set forth in the *Vienna Neue Freie*



American Official Photograph.

WITH THE AMERICAN ARMY AVIATION SECTION.—Cross-country formation flying, snapped from one of the aeroplanes by the official photographer. Eleven aeroplanes are, in all, in evidence in this photograph



*Presse*. This newspaper quotes startling figures of long processions of starving youths and children wandering through the country. Quoting the account of Feodoreescu, in the *Lumina*, it states that in one of these long processions of wanderers 2,500 perished. They were mostly schoolboys, from 13 to 16 years of age, who were ordered out of the newly-acquired territory to Moldavia, and left to their own resources by the Austrian or German military occupants. They had to make the entire journey on foot, and after walking a very few kilometres the youngsters were tired out, and being also exhausted through want of food, they fell by the road side. They passed through Ploesti and Focsani, and continued on to Dushoh, where only forty-seven out of 2,000 arrived. The rest had died of fatigue and starvation on their way. Another procession of 500, which was sent across the Pruth to Jassy and into Russia, fared still worse, not one of the 500 surviving. The leader of the sufferers, a deputy, has returned with 500 death certificates, and will bring forward an accusation in Parliament.

How do the five to twenty pound a week strikers over here think the above would compare to the treatment which the Huns would mete out to the British workers, once they had the power to do their will in these Isles? And yet with such daily object-lessons for guidance, absolutely inexcusable stoppages of the output of munitions are, at the call of a few traitors, still permitted to happen. Yet Dora can hardly be said to have passed away yet. Anyway she certainly gave forth a shivering little spasm last week, in the Prime Minister's manifesto to the "Absentees."

THERE has emerged just one sympathetic touch as an aftermath of the strike. Official reports from Coventry show that when the absentees *did* return to work, they just worked with all their might in the hope of making good the time lost by the strike.

HAD Dan Leno lived until 1918, he would have been able to add a couple more to his list of "eggs," viz., the "plane" egg and, commencing with this week, the "Government" egg. Poor Dan's "The egg" would probably have had to take a back seat under the hatchment provided by Dora.

ON a certain aviation ground in England a farmer was permitted to pasture his sheep at his own risk, the arrangement being that if an alighting aeroplane killed a sheep the farmer should receive its "dead" value from a local butcher. An unwary sheep was flattened out, more or less, and the carcass, according to agreement, delivered to the butcher. Later in the day the mess steward received an indignant note from the butcher, saying that the sheep was short of a leg. A polite answer was returned, with a leg of "chilled" mutton. And the mess enjoyed its fresh mutton and its little joke.—*Daily Chronicle*, "Office Window."

COMING events cast their shadows before. At Horbrand, near Bregenz, the "Zeppelin Wharf Company" has been established, with a capital of 50 million kronen.

MR. W. F. MASSEY, Prime Minister of New Zealand, last week, in giving a summary of notable happenings in regard to Britain's share in the war, which was altogether above her proportion, relative to the population, quoted the following figures as showing the Empire's tremendous effort:—

Men in arms, 7,500,000.

Of these, England has given 4,500,000, or 60 per cent., Scotland 8.3 per cent., Wales 3.7, Ireland 2.3, the Dominions and Colonies 12, and India and dependencies 13.7.

Enemy aircraft brought down in twelve months: More than 4,000.

Bombs dropped on the enemy this year: More than 800 tons.

Raids into Germany in June: Seventy-four.

Naval tonnage: Increased from four to well over six millions.

Naval personnel: Raised from 145,000 to 420,000.

War expenditure to March last: £7,014,000,000.

## British Output of Aeroplanes.

WRITING in the War Anniversary Supplement of *Overseas* Sir L. Worthington Evans, late Financial Secretary to the Ministry of Munitions, says: "British factories are now making in a single week more aeroplanes than were made during the whole of 1914, in a single month more than were made in the whole of 1915, and in a single quarter more than were made in the whole of 1916. The output for the whole of this year will be several times what it was during last year."

Raised by borrowing: £3,170,000,000.

Raised in revenue: £1,844,000,000.

Percentage raised by taxation: More than 25.

Loans to allies and Dominions: £1,526,000,000.

It's a comfort to know that, nevertheless, Mr. Massey's opinion is that "we can last longer than the other fellow."

IN and around London it is quite a study to note the varying methods of protection employed against air raids for our "works of art" and monuments. It rather sets one wondering who is finally responsible for judging which shall have a chance as a "work of art" of being handed down to posterity. By way of a "choice" example the Local Government Committee of the L.C.C. states that it has arranged for the removal and storage at the new County Hall of the figure on the top of Shaftesbury Memorial Fountain, but has decided to take no further action to protect the fountain against damage during air raids. The Committee, it has been decided, will take no action to protect Cleopatra's Needle against air raid damage.

THE following story was told to "Beachcomber" at dinner the other night—it came round with the port, and the teller vouched for its accuracy. A very young officer was taken up for a joy flight by an R.A.F. friend. Different stunts were to be part of the programme, but the passenger was horrified by the sensations of the first—looping the loop. Even to his uninstructed brain it was clear that all was not well, and he felt that the machine would never come right side up again.

At last it did, and his relief was enormous. His horror, however, may be imagined when the pilot managed to yell at him through the noise of the engines, "That was a rotten loop. I slipped in my seat, as I had forgotten the straps; but I'll do another for you."

## TEN YEARS AGO.

Excerpts from the "Auto." ("FLIGHT's" precursor and sister journal) of August 8th, 1908. "FLIGHT" was founded at the latter end of 1908.

### MORE GERMAN MILITARY AIRSHIPS.

Germany is to possess in a few days another military airship which has been constructed by the Motor Airship Study Society on the system of Major Parseval's earlier dirigible. It measures 182 feet long, and has a capacity of 4,500 cubic metres. The engine is rated at 90 h.p., and the principal peculiarity of the airship is the shape of the gas-vessel, which is built somewhat on the lines of a whale, with a blunt nose and tapering tail.

### BRITISH GRANTS FOR ARMY AIRSHIPS.

In announcing that all necessary steps were being taken by the British military authorities for the development of aeronautical work in connection with the Army, Mr. Haldane last week gave the following interesting figures in regard to the amount of State money which had been spent during the past few years on aeronautical work:—

1903-4	..	..	£14,600	1906-7	..	..	£20,750
1904-5	..	..	£19,600	1907-8	..	..	£16,500
1905-6	..	..	£23,000	1908-9	..	..	£13,750

### THE "REPUBLIQUE" AT CHALAIS MEUDON.

The new French military dirigible, "Republique," was taken on Friday afternoon from Moisson to its new quarters at Chalais Meudon. Captain Bois was in command, and the journey started at half-past nine in the morning and occupied 1 hour and 12 minutes, this period having included certain short intervals during which evolutions were executed in mid-air. The distance, as the crow flies, is 55 kiloms., and the wind during the run is reported to have been somewhat unpropitious.

### FARMAN FLIES IN AMERICA.

Mr. Henry Farman, who, as we have already announced, has taken his aeroplane across to the States, made a brief but successful flight on Sunday last, at the Brighton Beach Race-course before an enthusiastic crowd of spectators.

### American Aircraft Production.

ACCORDING to a message from Washington, Senator New, of the Aircraft Investigating Committee, has introduced a Bill into the U.S. Legislature proposing the centralisation of aircraft production by an executive department of the Government, to be known as the Department for Aeronautics, which will have complete control of the manufacture for the Army, the Navy, and the Marine Corps until the year after the war, the Bill to be based on the testimony which was laid before the Committee.



# THE ROYAL AIR FORCE

London Gazette, July 30th.

The following temp. appointments are made at the Air Ministry:—

**Staff Officers, 2nd Class.**—And to be Temp. Maj. while so employed:—Capt. P. A. Landry; May 6th. Lieut. (Temp. Capt.) J. D. Smith; July 13th.

The following relinquish their appointments:—Maj. J. G. Currie; July 16th. Lieut. (Temp. Maj.) W. P. Groves; July 18th.

**Staff Officers, 3rd Class.**—(Q.) J. A. Heather (Qrnr. and Hon. Lieut.) T. F. Res. is granted a temp. commission as Lieut., and to be Temp. Capt. while so employed, *vice* Sec. Lieut. (Temp. Capt.) W. A. Berry; July 9th. Sec. Lieut. W. T. Watson, and to be Temp. Capt. whilst so employed, *vice* Lieut. (Hon. Capt.) B. S. Cohen; July 19th. The name of Capt. W. A. Lawrance is as now described and not as in *Gazette*, April 2nd.

The following temp. appointments are made:—

**Staff Officers, 1st Class.**—And to be Temp. Lieut.-Col. while so employed:—Capt. (Temp. Maj.) G. S. Peacock; June 6th. Lieut. (Temp. Capt.) G. Philippi, M.C.; June 19th.

The notification in *Gazette*, June 14th, regarding Lieut. (Temp. Lieut.-Col.) D. N. Thomson, M.C., is cancelled.

**Staff Officers, 2nd Class.**—And to retain their temp. ranks:—Capt. (Temp. Maj.) H. F. A. Gordon; May 9th. Capt. (Temp. Maj.) C. O. F. Modin, D.S.C.; June 5th.

**Staff Officers, 3rd Class.**—And to be Temp. Capt. while so employed if not already holding that rank:—Lieut. (Temp. Capt.) T. Fawdry; April 1st to June 17th. Lieut. F. Jewell; May 27th. Lieut. J. T. Kyffin; July 3rd. (Q.) Sec. Lieut. (Temp. Capt.) W. A. Berry; July 9th.

## Flying Branch.

To be Temp. Lieut.-Col. while employed as Lieut.-Col. (A. and S.):—Maj. D. C. S. Evill, D.S.C., Capt. (Temp. Maj.) H. E. M. Watkins; July 17th.

Capt. (Temp. Lieut.-Col.) F. W. Lucas retains his temp. rank while employed as Lieut.-Col. (Dir.) from S.O.; July 9th.

Capt. (Temp. Maj.) I. Fraser to be Temp. Lieut.-Col. while employed as Lieut.-Col. (Dir.); July 17th.

Capt. T. A. Batchelor to be Temp. Maj. while employed as Maj. (A. and S.); July 20th.

Lieuts. (Temp. Capt.) to be Temp. Maj. while employed as Maj. (A. and S.):—G. Merton, M.C.; May 17th. R. F. S. Leslie, D.S.C.; June 19th. J. S. F. Morrison; July 15th. G. E. Livock; July 23rd.

Lieuts. to be Temp. Capt. while employed as Capt. (A. and S.):—E. J. Webster; June 20th. A. C. Sharwood; June 30th. W. M. Cariaw, R. Harrison, C. Ross; July 14th. V. S. Bennett, J. E. Doyle; July 16th. C. R. Keary; July 17th. W. E. M. Whittaker; July 18th. W. C. Carter, J. E. Gurdon, (Hon. Capt.) A. H. Pearce; July 23rd.

Capt. F. H. Mardall to be Capt. (A. and S.) from (Ad.); May 7th, seniority April 1st (substituted for notification in *Gazette*, July 16th).

Capt. D. G. Young to be Capt. (A. and S.) from (Ad.); May 22nd.

Lieut. (Temp. Capt.) E. L. B. Buchanan retains his temp. rank whilst employed as Capt. (Dir.) from (K.B.); July 22nd.

Lieut. (Hon. Capt.) R. V. Goddard to be Capt. Temp. whilst employed as Capt. (Dir.); July 22nd.

The following Lieuts. (Hon. Capt.) to be Temp. Capt. whilst employed as Capt. (O.):—B. A. Malet, D. S. Earp, C. N. Downes; June 27th. Lieut. T. G. Greenwell to be Lieut. (Dir.) from (K.B.); July 22nd.

The following Lieuts. (Observer Officers) to be Lieuts. (A. and S.):—V. H. G. Parker; May 9th. A. Simmons, K. K. E. Bonnerjee; May 16th. D. M. Harper; May 19th. T. C. S. Tuffield, L. W. Harman; May 22nd. R. H. Le Lievre; May 25th.

Lieut. (Hon. Capt.) E. Burrows to be Lieut. (Hon. Capt.), A. and S., from (O.); May 22nd.

Sec. Lieut. W. A. Russell to be Sec. Lieut. (A. and S.) from (T.); May 9th. J. J. Tates (Lieut., late Gen. List, R.F.C.) to be Sec. Lieut. (A. and S.), and to be Hon. Lieut.; May 10th.

The following Sec. Lieuts. (late Gen. List, R.F.C., on prob.) are confirmed in their rank as Sec. Lieuts. (A. and S.):—T. E. Snelgrove; April 16th. C. A. Schiller; April 19th. J. C. J. McDonald, J. M. Dandy; April 25th. F. C. Tanner; April 26th. R. W. Simpson; April 28th. H. F. Banks; April 30th. W. H. Doherty; May 4th. W. J. Brooks; May 7th. T. J. Roberts; May 8th. F. Latimer, R. P. Arliss, W. D. Bryan; May 10th. T. Raines, J. A. Barber; May 12th. R. A. Ritchie, D. A. Cobbold; May 13th. H. E. Anderson, C. Taylor; May 16th. R. J. Mayer, C. N. Davies, G. C. W. Dufty, H. H. Reeves, W. Smith; May 17th. B. Rennett, C. S. Rathbone; May 18th. R. F. Hacon, A. A. Schulman; May 19th. A. R. Delay, R. L. Scharff, E. V. Brown, J. B. Nower, S. E. Booth, S. G. Davies, J. M. McLeod, W. L. Roblon; May 21st. F. J. Frappe, A. R. MacDonald, J. Sandford, R. R. Macnaughton; May 22nd. G. Burton, G. F. Poole, R. Walker, K. Shanks; May 23rd. F. W. Barnes, J. A. Sherrett, D. McK. Sheridan; May 24th. T. E. Gibbs, W. H. Hopper, L. S. Dare; May 25th. W. Sutcliffe, O. H. Campbell; May 26th. L. C. Phillips, A. G. Boff; May 27th. A. S. Hinde; May 28th. C. B. Hales, R. H. Sanders; May 29th. H. A. Rolls, J. C. Regester, A. F. V. Clark, W. Molineaux; May 30th. F. L. Steggall; May 31st. F. W. G. Goowin; June 1st. A. F. Millar; June 6th. J. N. Hamman; June 10th. F. W. Long, S. I. Bennett; June 17th. E. A. Siegrist; June 25th. J. F. Kinlock, R. H. French, L. B. Lake, W. A. Spence; June 26th. R. P. McHaffie, J. Ditchfield; June 27th. W. Mitchell; July 1st. D. Benzie, L. C. Band; July 2nd. S. T. Stidolph; July 4th. S. C. Millar; July 5th.

The following are granted temp. commissions as Sec. Lieuts. (A. and S.):—C. J. Towler (Sec. Lieut., R.W. Kent R., Spec. Res.), E. A. Johnson (Lieut., Cent. Ont. R., C.E.F.), and to be Hon. Lieut.; May 13th. J. McK. Reilly (Sec. Lieut., R. Ir. R., Spec. Res.); May 14th. N. A. Doggart (Temp. Capt., Soc. Rif.), and to Hon. Capt., J. H. Ball (Temp. Sec. Lieut., Yorks L.I.); May 17th. J. Bremner (Sec. Lieut., R. Scots, T.F.); May 18th. R. N. Pennington (Lieut., Quebec R., C.E.F.), and to be Hon. Lieut.; May 19th. T. H. Hesketh (Sec. Lieut., R.E., T.F.); May 22nd. W. J. Bethune (Lieut., Cam'n Highrs., T.F.), and to be Hon. Lieut.; R. F. W. Sheraton (Sec. Lieut., W. Som. Yeo., T.F.); May 23rd. P. G. Hutton (Lieut., Lond. R., T.F.), and to Hon. Lieut.; May 24th. G. Robinson, M.C. (Temp. Lieut., Conn. Rang.), and to be Hon. Lieut.; May 26th. L. Michell, M.C. (Lieut., Lond. R., T.F.), and to be Hon. Lieut.; June 7th. C. B. Rait (Temp. Lieut., Cam'n Highrs.), and to be Hon. Lieut.; June 17th. J. B. Edwards (Temp. Sec. Lieut., Manch. R.); July 4th.

D. B. C. Fulton, Prob. Flight Officer (late R.N.A.S.), is granted a temp. commission as Sec. Lieut. (A. and S.); May 16th.

The following Prob. Flight Officers (late R.N.A.S.) are granted temp. commissions as Sec. Lieuts. (A. and S.):—J. B. Badgley, H. J. McLeod, C. B. Rutherford; May 24th. W. D. E. Donaldson; May 25th. H. G. Clappison, R. W. Frost; May 26th. J. A. Sutherland, H. C. Baird, A. K. McGill, T. L. Harding, S. E. Whitley; June 21st. G. McG. Pinkerton, F. W. Wright; June 27th. J. L. F. Creighton, F. W. C. Body, G. H. Grieve, K. J. Bellamy, O. J. Dean, A. L. Lightowler, I. Duval, R. G. K. Morrison, J. O. Armes; June 28th. H. A.

Sutherland; June 29th. S. H. Thornton; July 3rd. H. P. N. Gubbins, F. N. Winskill, H. G. Thompson, H. McD. Keith, F. F. Smith, G. K. Waterhouse, S. M. Morris, A. J. Reith, H. A. Lye, J. E. Greenwell, F. L. Hutchison; July 5th.

J. H. Nickson, Sec. Lieut. (late Gen. List, R.F.C., on prob.), is confirmed in his rank as Sec. Lieut. (K.B.); July 8th.

C. T. Perrins, Temp. Sec. Lieut. (attd. R. War. R.), is granted a temp. commission as Sec. Lieut. (K.B.); May 10th.

The following Prob. Flight Officers (late R.N.A.S.) are granted temp. commissions as Sec. Lieuts. (K.B.):—A. McCullough, L. F. E. Smith; July 8th.

Lieut. (Hon. Capt.) H. G. Hall, D.S.C., to be Lieut. (Hon. Capt.) (Observer Officer), from (A. and S.); May 7th.

The following Sec. Lieuts. (late Gen. List, on prob.) are confirmed in their rank as Sec. Lieuts. (Observer Officers):—A. A. Tigar; April 24th. R. M. Campbell; May 9th. W. S. Spark; June 2nd. O. Bell, B. S. W. Taylor, R. E. Sothcott; June 20th. K. C. B. Woodman, R. A. C. Brie; June 25th. T. Jamieson; June 28th. E. J. Munson; June 29th. C. G. Pickard; July 2nd. T. K. Ludgate; July 4th.

The following are granted temp. commissions as Sec. Lts. (Observer Officers):—H. Morden-Wright, M.C. (Sec. Lieut., R.F.A., T.F.); April 2nd. R. J. McNab (Temp. Lieut., M.G.C.), and to be Hon. Lieut., F. C. de L. Kirk (Lieut., Norf. R.), and to be Hon. Lieut.; April 5th. N. Peters (Temp. Lieut., North'd Fus.) and to be Hon. Lieut.; April 8th. A. H. McLachlan (Lieut., Can. Rly. Services, C.E.F.), and to be Hon. Lieut.; April 13th. H. J. Vickers (Lieut., I.A.R.O.), and to be Hon. Lieut.; April 16th. R. S. Blucke (Lieut., Dorset R., Spec. Res.), and to be Hon. Lieut.; April 24th. J. C. F. Holland (Lieut., R.E.), and to be Hon. Lieut.; W. Hawk (Lieut., D. of Corn. L.I., T.F.), and to be Hon. Lieut.; April 25th. G. H. A. Hart (Sec. Lieut., Shrops. L.I., Spec. Res.); May 2nd. H. E. Simmons, M.C. (Temp. Lieut., Welsh R.), and to be Hon. Lieut.; May 3rd. W. Williamson (Temp. Sec. Lieut., attd. Devon R.); May 5th. G. J. Williams (Lieut., Hereford R., T.F.), and to be Hon. Lieut.; May 6th. E. McEwan (Lieut., R.A.), and to be Hon. Lieut. F. H. Sibley (Lieut., R.F.A., T.F.), and to be Hon. Lieut.; May 10th. A. Cumming (Sec. Lieut., High. L.I.); May 11th. N. W. Walsley, M.C. (Temp. Lieut., Lan. Fus.), and to be Hon. Lieut.; May 15th. A. L. B. Bennett (Temp. Sec. Lieut., attd. Hamps. R.); June 2nd. T. J. Keating (Temp. Lieut., R.F.A.), and to be Hon. Lieut.; June 3rd. R. S. Hall (Lieut., Dorset R., Spec. Res.), and to be Hon. Lieut.; June 4th. A. L. Jordan (Temp. Sec. Lieut., M.G.C.); June 5th. C. C. Blizard (Temp. Lieut., Middx. R.), and to be Hon. Lieut., P. E. Appleby (Temp. Sec. Lieut., attd. K.R. Rif. C.), A. G. L. Mullen (Sec. Lieut., Durh. L.I., T.F.); June 25th. W. G. Norden (Temp. Sec. Lieut., R.E.), M. H. Cole (Temp. Sec. Lieut., Transvaal and Rhodesian R., S.A. Infy), R. H. Wetherall (Temp. Capt., North'd Fus.), and to be Hon. Capt.; June 28th. S. C. Thornley (Temp. Sec. Lieut. E. Lan. R.), E. Beale (Temp. Sec. Lieut., R. Berks. R.); June 29th. F. P. Cobden (Temp. Lieut., M.G.C.), and to be Hon. Lieut.; July 2nd.

A. K. Mackereth (Prob. Flight Officer) (late R.N.A.S.) is granted a temp. commission as Sec. Lieut. (Observer Officer); April 4th.

The following Flight Cadets are granted temp. commissions as Sec. Lieuts. (Observer Officers):—W. R. T. Chamberlain; July 6th. C. H. Huntley, J. S. Hutchinson, E. W. F. Jinman, R. L. Kingham, B. Kne, E. G. Lay, W. Learmouth, J. A. Lisle, L. I. Lowthian, W. McKay, R. E. Owen, R. W. Rawley, G. C. Russell, H. J. Copp, H. P. A. O'Mant, C. G. Harding, E. J. Norris, P. C. S. McCrea, D. M. Calderwood, B. J. Malyan, A. C. Bruce, J. H. Deas, J. H. Davies, J. Hall, J. G. W. Halliday; July 12th. J. F. A. Segner; July 17th. A. M. Harrison, E. L. Baddeley, A. T. Bower, S. G. Burton, G. A. Faulkner; July 24th. W. D. Coates, R. H. Rawl, R. T. Down, S. H. L. Kelly; July 26th. K. H. Ashton, H. E. Alsford, H. H. Brasche, A. S. Papworth, L. J. B. Ward; July 27th. A. J. Goodship, J. R. Lofthouse, W. H. B. Lamb, R. G. Miller, T. L. Leonard, J. W. R. McPhail; July 30th.

The following Cadets are granted temp. commissions as Sec. Lieuts. (Observer Officers):—J. J. Comerford; May 31st. L. Eteson, J. W. Fiddin, F. G. W. Gough, S. J. Griffin, W. Hall, L. T. Hope, T. W. Kelly, H. S. Mullen, J. F. Foggo, C. R. Gage, E. St. C. Harvey, J. Harrington, J. E. Hermon, J. M. Holling, J. N. Kier, E. G. Locke, I. W. McEachran, J. Pugh, W. Smith, C. W. Woodend, H. C. Wood, G. W. Wills, F. B. Robinson, R. Watson, J. J. Ward, H. Good, F. C. King, A. E. Smith; July 19th. H. Crossley, E. G. Banham, J. C. Barns, R. Buckley, H. C. Shires, D. E. Stephens, J. A. Horner, T. R. Hiltout; July 22nd. P. Hinde, D. C. North, T. L. Heaslan, W. G. Campbell, A. R. Macpherson, A. Fairley, A. A. Neilson, L. J. Lavington, F. P. Wheeler, G. D. Churchward, R. W. Rollinson, H. N. Ulyott, M. Nicol, K. S. Hill, E. M. S. Kearney, D. V. Hoskins, R. Lister, S. E. Gillmar, G. I. Thomson, G. Goodall, W. G. D. MacLennan, R. P. Hicklin, H. R. W. Steele, C. J. A. Guyman, T. A. Thomas, J. N. T. Spence, W. Lowe, R. E. Haestier, A. A. Verity, C. H. Foot, C. E. Whitaker, F. Marshall, G. H. Haslam; July 27th.

Lieut. H. W. Padgett (Sec. Lieut., R. Lanc. R., T.F.) relinquishes his commission on ceasing to be employed; June 24th.

Capt. (Temp. Maj.) W. H. Wilson relinquishes his commission on account of ill-health contracted on active service, and is granted the hon. rank of Maj.; July 31st.

Lieut. B. W. Broach resigns his commission, and is granted the hon. rank of Lieut.; July 31st.

Lieut. A. M. McTavish resigns his commission; July 31st.

The following Sec. Lieuts. relinquish their commissions, having been found permanently unfit as Pilots or Observers:—J. H. Hewitt, R. McCormack, W. E. Keel, S. P. Seddon, C. H. Rvley, J. H. Brooks, H. J. Ough, J. A. King, W. L. McGregor, W. C. J. Rogers, W. A. Hunt, C. F. Miller, A. Brothers, W. Hayward, A. F. Stevens, E. H. J. Fitch; July 31st.

The surname of Temp. Maj. H. Hemming is as now described, and not as in *Gazette* of July 16th.

The notification in *Gazette* of May 17th concerning F. Lodge is cancelled.

The notification in *Gazette* of July 16th concerning Sec. Lieut. J. G. Proger is cancelled.

## Administrative Branch.

The following Maj. to be Maj. from (S.O.):—J. M. Boyd, J. St. A. King; April 1st.

A. C. Rowden (Lieut., R. Suss. R., T.F.) is granted a temp. commission as Lieut., and to be Temp. Capt. whilst employed as Capt.; May 11th (substituted for notification in *Gazette* June 18th).

The following are granted temp. commissions as Capt. (A. and S.):—A. E. Irvin (Temp. Capt., York and Lanc. R.); May 30th. W. F. Macdonald (Temp. Capt., R. Fus.); June 9th. J. L. Lucena (Temp. Capt., R.G.A.); June 15th.

The following Lieuts. to be Temp. Capt. whilst employed as Capt.:—W. H. Lyall; June 1st. G. W. Riley, from (A. and S.); June 6th. G. W. Panter; July 18th.

The following are granted temp. commissions as Lieuts. and to be Temp. Capt. whilst employed as Capt.:—H. W. C. Ripley (Temp. Lieut., Shrops. L.I.); April 1st. G. H. Puckle (Lieut., I.A.R.O.); May 22nd.



J. M. Adams (Sec. Lieut., Gord. Highrs.) is granted a temp. commission as Sec. Lieut., and to be Temp. Capt., but with pay and allowances of Lieut.; June 18th.

The following are granted temp. commissions as Lieuts.:—R. J. Porter (Ormr. and Hon. Capt., R. Innis, Fus.), and to be Hon. Capt.; April 27th. H. N. Aston (Lieut., York and Lanc. R.); May 28th. J. Milne (Capt., Leic. R.), and to be Hon. Capt.; June 12th. W. F. Egerton (Capt., W. Kent Yeo.), and to be Hon. Capt.; July 8th. S. G. Lewis (late Hon. Sec. Lieut., Gen. List) is granted a temp. commission as Lieut.; April 23rd. Capt. H. Dureen reverts to Lieut., and is granted the hon. rank of Capt.; June 1st. Capt. E. C. Winkley to be Lieut. (Hon. Capt.), from (A. and S.); July 2nd.

The following Lieuts. (A. and S.) to be Lieuts.:—M. Dodd; July 1st. W. G. Kewley; July 12th. F. H. Austin; July 25th.

Lieut. L. V. Nicholson to be Lieut., from (O.); July 18th.

The following Sec. Lieuts. to be Temp. Lieuts. whilst employed as Lieuts.:—H. Balls, C. T. Johnson; June 1st.

W. H. D. Phillips (Sec. Lieut., R. Marines) is granted a temp. commission as Sec. Lieut. and to be Temp. Lieut. whilst employed as Lieut.; June 26th.

Lieut. A. J. Cassidy to be Sec. Lieut., and to be Hon. Lieut., from (A. and S.); June 13th.

The following are granted temp. commissions as Sec. Lieuts.:—A. E. Pitcher; June 3rd. H. J. Mordaunt; July 1st. S. C. Addison; July 22nd. B. Rooke-Cowell; July 24th. J. Calderwood, G. Elliott, F. N. Gooding, H. E. Stiles; July 26th.

Capt. V. Hewett relinquishes his commission on account of ill-health, and is granted the hon. rank of Capt.; July 31st.

The following Sec. Lieuts. relinquish their commissions on account of ill-health, and are granted the hon. rank of Sec. Lieut.:—W. H. Allen, F. le B. Egerton; July 31st.

Sec. Lieut. Sir R. N. H. Cunliffe resigns his commission; July 31st.

The date of appointment of Capt. C. H. Frazier is May 11th, and not as stated in *Gazette* May 28th.

The notification in *Gazette* July 23rd regarding Sec. Lieut. T. G. Lewis is cancelled.

## Gymnastic Staff.

To be Area Superintendents:—Maj. P. Owen; May 29th. Capt. B. T. Metcalfe; May 31st. A. H. A. Gem, M.C. (Lieut., Notts and Derby R.), and is granted a temp. commission as Lieut.; June 4th. T. Knowles (Lieut., Gen. List), and is granted a temp. commission as Lieut., and to be Temp. Capt. while so employed; April 9th. F. K. Moncur (Lieut., Sea Highrs.), and is granted a temp. commission as Lieut. and to be Temp. Capt. while so employed; April 29th.

## Technical Branch.

Lieut.-Col. A. D. Carden, D.S.O., to be Lieut.-Col., from S.O.; May 18th.

To be Temp. Maj. while employed as Maj.:—Capt. W. J. C. Brown, Lieut. (Temp. Capt.) R. H. Nicholson, from (K.B.); June 11th.

Capt. (A. and S.) to be Capt.:—K. R. Paterson; May 7th. F. P. Donn; July 11th.

Lieut. C. G. Carson to be Temp. Capt. while employed as Capt.; April 7th.

Sec. Lieut. (Hon. Capt.) A. T. Cranmer to be Temp. Lieut. (Hon. Capt.) while employed as Lieut.; July 2nd.

Lieut. J. W. Mitchell to be Sec. Lieut., and to be Hon. Lieut., from (O.); April 3rd.

Sec. Lieuts. (Admin.) to be Sec. Lieuts.:—W. G. Willis; June 8th. L. M. Bubier, F. G. Cartman, C. W. Curtis, B. M. Hickman, W. Johnstone, D. A. Willmott; July 8th. H. W. Rigden, B. R. Howell; July 10th.

The following Sec. Lieuts. (late Gen. List, R.F.C., on prob.) are confirmed in their rank as Sec. Lieuts.:—H. T. Hamblin; April 12th. W. H. Parker; May 1st. H. Jacques; May 3rd. H. F. Robertson; June 13th. A. E. W. Davis; July 8th. H. E. Wiltshire; July 10th.

The following are granted temp. commissions as Sec. Lieuts.:—H. M. Rootham (Hon. Lieut., Staff. for R.E. Services), and to be Hon. Lieut.; May 16th. R. S. Clifton (Temp. Lieut., R.E.), and to be Hon. Lieut.; June 23rd. F. W. Stiles (Sec. Lieut., R.G.A., Spec. Res.); July 8th.

Capt. E. H. Fitchew (Lieut., R.N.V.R.) relinquishes his commission on ceasing to be employed; July 4th.

Sec. Lieut. (Hon. Capt.) J. A. V. Noel (Capt., R.G.A.) relinquishes his commission on ceasing to be employed; July 24th.

Sec. Lieut. E. H. Jones relinquishes his commission on account of ill-health, and is granted the hon. rank of Sec. Lieut.; July 31st.

Lieut. J. T. Rossiter resigns his commission; July 31st.

The date of appointment of Capt. H. E. Hickmott to Temp. Maj., notified in *Gazette*, July 23rd, is July 15th.

The notification in *Gazette*, May 28th, regarding Capt. K. R. Paterson is cancelled.

## Medical Branch.

Lieut. D. Pennington to be Capt.; July 16th.

T. H. James is granted a temp. commission as Capt.; July 29th.

The following are granted temp. commissions as Lieuts.:—J. P. Hosford; July 5th. C. Duggan, A. St. J. Hennessy, E. H. L. Le Clezio, O. S. Martin, O. P. Turner; July 29th.

F. G. Willock, D.S.O. (Lieut.-Col., R.A., T.F.) is granted a temp. commission as Lieut.-Col., and to be Temp. Brig.-Gen. while employed as Comdt.; July 25th.

H. J. Corin (Dental Surg., R.N.V.R.) is granted the hon. rank of Maj.; July 31st.

Lieut. E. J. Smyth to be Temp. Capt. while employed as Liaison Officer; July 31st.

E. A. Willder to be Temp. Hon. Lieut. while employed as Asst. Insp. Aeronautical Inspectn. Dept.; April 1st.

Lieut. J. N. Clark to take rank and prec. as if his appointment as Lieut. bore date June 26th.

The following relinquish their commissions on ceasing to be employed:—Lieut. R. F. Berrill (Lieut., R.F.A.); July 1st. Sec. Lieut. (Hon. Lieut.) E. A. Walmisley (Capt., R. W. Surr. R.); July 8th.

The appointment to a temp. commission as Lieut.-Col. of J. M. Fraser (Capt., R.N.V.R.) is cancelled.

The notification in *Gazette*, July 23rd, regarding Lieut. H. Pooley is cancelled.

## London Gazette, August 2nd.

The following temp. appointments are made:—

Staff Officers, 2nd Class.—Capt. (Temp. Maj.) H. R. Bentley; April 1st. Maj. H. Ingram; June 26th. Capt. E. O. Grenfell, M.C., and to be Temp. Maj. whilst so employed, vice Capt. (Temp. Maj.) C. E. Goggin; July 13th. The date of appointment of Maj. A. J. W. Barnby is May 3rd, and not as stated in *Gazette* of July 2nd.

Staff Officers, 3rd Class.—And to be Temp. Capt. whilst so employed, if not already holding that rank:—Lieut. D. N. Thomson, M.C.; April 1st. Lieut. (Temp. Capt.) G. K. Macdonald; June 11th. Lieut. (Temp. Capt.) T. L. F. Burnett, Sec. Lieut. A. B. Staples; June 26th. Capt. H. M. Massey, M.C.; June 30th. Lieut. (Temp. Capt.) G. A. Scott, Capt. (Temp. Maj.) A. P. Davidson, and to relinquish his temp. rank. (Q.) Lieut. C. G. Turpin; Aug. 3rd.

## Flying Branch.

Lieuts. to be Temp. Capt. whilst employed as Capt. (A. and S.):—W. Pallister; July 6th. E. T. Morrow; July 13th. R. J. Elliott (Hon. Capt.) J. E. L. Hunter;

July 16th. (Hon. Capt.) B. M. King, D.F.C.; July 23rd. W. Walker; July 25th. (Hon. Capt.) E. Anthony; July 26th. Lieut. (Hon. Capt.) H. N. Witting to be Temp. Capt. whilst employed as Capt. (K.B.); June 30th. The following Lieuts. (Observer Officers) to be Lieuts. (A. and S.):—V. H. Legg; May 3rd. E. J. O'fl Ross; May 4th. C. E. B. Corbould, M. R. D'Arcy; May 27th. W. H. Davies, H. G. D. Breckson, J. C. Thompson; May 31st. H. J. B. Bain; June 4th. G. W. Butchart; June 11th. A. L. Taylor; June 13th. Sec. Lieuts. (late Gen. List, R.F.C., on prob.) confirmed in their rank as Sec. Lieuts. (A. and S.):—H. R. Scobell; May 4th. H. V. D. Read; May 5th. C. E. Watson, C. E. Tidy; June 14th. E. Barker; July 3rd. The following are granted temp. commissions as Sec. Lieuts. (A. and S.):—F. O. Sprinks (Temp. Capt.) R. Ir. Fus.), and to be Hon. Capt.; May 7th. W. J. Cooke (Temp. Lieut., Leins. R.), and to be Hon. Lieut.; May 9th. E. Knowles (Lieut., E. Lan. R., T.F.), and to be Hon. Lieut.; May 23rd. P. R. Cook (Lieut., R.F.A., Spec. Res.), and to be Hon. Lieut.; May 24th. G. W. Neill, M.C. (Lieut., Leins. R.), and to be Hon. Lieut. (since killed). J. E. Workman (Temp. Sec. Lieut., Glouc. R.), E. E. Lickfold (Temp. Lieut., Br. W.I.R.), and to be Hon. Lieut.; May 25th. L. B. E. Lloyd (Lieut., Lord Strathcona's Horse, C.E.F.), and to be Hon. Lieut.; May 26th. V. W. Helps (Lieut., Som. L.I., T.F.), and to be Hon. Lieut.; F. W. C. Elles (Sec. Lieut., I.A.R.O.), E. C. Brown (Temp. Sec. Lieut., Som. L.I.); May 27th. W. V. Ribbins (Sec. Lieut., I.A.R.O.), E. L. Ridley (Lieut., R. Muns. Fus.), and to be Hon. Lieut.; G. W. Heap (Sec. Lieut., Lan. Fus., Spec. Res.); May 28th. C. H. Stewart, M.C. (Sec. Lieut., Welsh R., T.F.), E. C. Kelly (Temp. Sec. Lieut., Leins. R.); May 29th. A. Inglis (Lieut., R. S. Fus., T.F.), and to be Hon. Lieut.; W. H. Cole (Lieut., R. Ir. Fus., Spec. Res.), and to be Hon. Lieut.; A. A. J. Poole (Temp. Lieut., Rhodesian Native R.), and to be Hon. Lieut.; W. A. Moore (Lieut., Rif. Brig., Spec. Res.), and to be Hon. Lieut.; May 30th. H. T. Partridge (Lieut., R. Suss. R., T.F.), and to be Hon. Lieut.; P. B. Davies (Lieut., Welsh R., T.F.), and to be Hon. Lieut.; A. J. Forbes (Sec. Lieut., R. N. Devon Yeo., T.F.); May 31st. R. J. V. Pulvertaft (Lieut., R. Suss. R., Spec. Res.), and to be Hon. Lieut.; J. G. Wilson (Temp. Sec. Lieut., attd. S. Lan. R.), F. L. Clark (Temp. Sec. Lieut., attd. E. Surr. R.), A. E. Masters (Temp. Sec. Lieut., attd. R. Suss. R.); June 3rd. N. T. Kennard (Temp. Sec. Lieut., attd. E. Suss. R.), D. M. Davies (Lieut., Pembroke Yeo., T.F.), and to be Hon. Lieut.; June 10th. J. C. Kennedy (Temp. Lieut., Arg. and Suth'd Highrs.), and to be Hon. Lieut.; June 12th. The following Cadets are granted temp. comms. as Sec. Lieuts. (A. and S.):—E. R. Stafford; April 27th. A. E. Potter; May 5th. M. Tait, D. M. David; May 10th. N. C. Dudding; May 12th. G. W. A. Onions; May 13th. J. B. Friend, A. J. Black; May 20th. H. Williams; May 23rd. J. Humberstone; May 24th. A. Hadden. S. G. Shand; May 25th. W. Massey, W. Long; May 27th. N. P. Longden, S. S. Rosenheim, L. W. G. Ward; May 28th. B. W. Hammond, A. E. Button; May 29th. V. G. A. Bennett, E. J. Christie, C. W. Grant, G. A. R. Shilson, C. A. Songhurst; May 30th. W. H. Samuel, K. Bannister, W. R. Ayling, E. L. Wynn, N. E. Chapman, P. E. Groom, A. W. Sumpter; May 31st. D. A. H. Jones, S. Gibbs; June 3rd. H. Toms; June 8th. J. C. Bishop, E. J. Storey, A. J. M. Medcalfe; June 9th. F. F. Weingott; June 10th. P. G. Spargo, A. M. Verity; June 11th. C. E. Watson; June 14th. G. S. Walpole is granted a temp. commission as Sec. Lieut. (Dir.); July 29th. The following are granted temp. commissions, as Sec. Lieuts. (K.B.):—A. Schofield (Sec. Lieut., R.G.A., Spec. Res.), S. C. W. Lovejoy (Temp. Sec. Lieut., York and Lanc. R.), R. A. Henry (Lieut., R.G.A., Spec. Res.), and to be Hon. Lieut.; June 25th. Sec. Lieuts. (late Gen. List, R.F.C., on prob.) are confirmed in their rank as Sec. Lieuts. (Observer Officers):—W. Hewitt; July 26th. A. Provan; July 31st. H. C. Maller; Aug. 3rd. The following are granted temp. commissions as Sec. Lieuts. (Observer Officers):—P. F. Fenner (Temp. Sec. Lieut., R.W. Kent R.); July 26th. J. R. Fox (Sec. Lieut., Manch. R., T.F.); July 27th. G. E. Lange (Temp. Capt., Br. W.I.R.), and to be Hon. Capt.; A. G. Braham (Sec. Lieut., Yorks L.I., T.F.), G. E. Hunt (Sec. Lieut., Yorks L.I., T.F.), G. Parker (Sec. Lieut., W. Rid. R., T.F.), G. N. Tresidder (Lieut., E. Ont. R., C.E.F.), and to be Hon. Lieut.; July 31st.

The following Cadets are granted temp. commissions as Sec. Lieuts. (Observer Officers):—H. Grant, J. W. Bowler, F. W. R. Thomas, H. G. Penwarden, L. J. Lomax, J. F. Bates; April 4th. E. W. Reynolds, F. E. Horley; April 23rd. A. A. Butt, W. J. Barker, A. J. Cripps, F. A. S. Fletcher; April 25th. J. L. Phys, J. W. Rhodes, C. Brears; May 13th. W. Mann, J. Chacksfield; May 23rd. J. C. M. Hatfield, L. G. Crossbey, W. V. Pearce, J. Anderson, F. S. Brooks; June 2nd. H. A. Boniface, E. Smith, C. G. Russell, W. T. Madge, T. H. Swann; July 20th.

Capt. C. W. F. Morgan relinquishes his commission on account of ill-health, and is granted the hon. rank of Capt.; Aug. 3rd. Lieut. A. J. Golding relinquishes his commission on account of ill-health contracted on active service, and is granted the hon. rank of Lieut.; Aug. 3rd. Lieut. C. de L. Shortt relinquishes his commission on account of ill-health contracted on active service; Aug. 3rd. The following Lieuts. resign their commissions:—T. H. Blair, G. A. F. Layton; Aug. 3rd. Lieut. E. F. Stein relinquishes his commission, having been found permanently unfit as Pilot or Observer; Aug. 3rd. The following Sec. Lieuts. relinquish their commissions, having been found permanently unfit for further instruction as Pilots or Observers:—R. S. McKim, W. L. Thomas, H. C. Lewis, L. Fewkes, R. S. Pilcher, R. H. Wright, L. C. Egington, G. Silverman, A. D. Gudgeon, D. Ferguson, H. I. Denison, C. N. Gould, R. A. Bertram, J. R. Aitken, D. C. Cooney, C. Kay, H. McCallum, C. R. Kent; Aug. 3rd. Surname of Temp. Capt. E. C. Johnston is as now described and not as stated in the *Gazette* of July 9th; surname of Temp. Maj. W. W. Leete is as now described and not as stated in the *Gazette* of July 12th. Notification of July 12th concerning Sec. Lieut. C. J. Hooley is cancelled. Notification of July 16th concerning Sec. Lieut. C. L. H. Johnson is cancelled. Notification of July 23rd concerning Capt. H. N. Whiting is cancelled.

## Administrative Branch.

R. F. Williams (late Maj., Liverpool R.) is granted a temp. commission as Maj. and to be Temp. Lieut.-Col. while employed as Lieut.-Col.; July 15th. Lieut. (Temp. Capt.) S. T. Grant to be Temp. Maj. while employed as Maj.; July 26th. Lieut. A. E. Kennedy to be Temp. Capt. while employed as Capt.; Aug. 1st. G. F. Law (Sec. Lieut., A.S.C.) is granted a temp. commission as Lieut.; June 1st. (Substituted for notification in *Gazette* of July 23rd.) F. Dance (Lieut., Midd'x R.) is granted a temp. commission as Lieut.; June 21st. Lieuts. (A. and S.) to be Lieuts.:—P. H. S. Tozer; May 30th. E. D. S. Groome; July 22nd. C. Bell; July 23rd. Lieuts. (O.) to be Lieuts.:—J. E. G. O'Byrne; May 1st. R. V. Hope; June 6th. (Hon. Capt.) C. H. M. Willson, and to be Hon. Capt.; July 24th. Sec. Lieuts. to be Temp. Lieuts. while employed as Lieuts.:—R. J. H. F. Beresford; May 22nd. (Hon. Lieut.) A. T. le F. Johnson; June 9th. E. R. Wood; July 9th. Sec. Lieut. S. C. Player (late Gen. List, R.F.C., on prob.), is confirmed in his rank as Sec. Lieut.; June 18th. G. H. Tait (Sec. Lieut., Cam'n Highrs., T.F.), to be Sec. Lieut.; June 27th. The following are granted temp. commissions as Sec. Lieuts.:—J. N. Dillon; July 20th. A. B. S. Baker, E. E. Blake, A. J. Brown, M. Cooper, A. Dalziel, J. G. Macksey (late Sec. Lieut., Midd'x R.), A. G. Groom, G. E. Hunting, N. K. Lawton, W. Rollinson, J. Sewell, W. S. Stiles, C. R. Tweeddale, S. Warburton, H. A. Williams, E. A. Wilson; Aug. 1st. The following Cadets are granted temp. commissions as Sec. Lieuts.:—J. C. Rowell; April 5th. S. L. Clark; April 26th. The following Sec. Lieuts. relinquish their commissions on account of ill-health, and are granted the hon. rank of Sec. Lieuts.:—F. H. Gain, H. K. Loosen, C. G. de Montall, R. S. V. Morris, E. W. Royce-Riddall; Aug. 3rd. Sec. Lieut. A. B. Richardson relinquishes his commission on account of ill-health; Aug. 3rd. The following Sec. Lieuts. resign their commissions:—C. H. A. Morgan, C. Sidebottom; Aug. 3rd.



**Technical Branch.**

Capt. to be Temp. Maj. whilst employed as Maj. :—L. M. Lilley ; June 18th. W. Thomas, M.C. ; July 27th. Lieut. (Temp. Capt.) S. Curtis retains his temp. rank whilst employed as Capt. from (Ad.) ; April 1st. Sec. Lieuts. to be Temp. Lieuts. whilst employed as Lieuts. :—E. W. Dexter ; July 1st. A. L. Cockburn ; July 9th. H. Bradford ; July 23rd. Sec. Lieuts. (A. and S.) to be Sec. Lieuts. :—B. V. Brown, R. J. Parkes ; July 27th. Sec. Lieuts. (Ad.) to be Sec. Lieuts. :—J. R. Johnson ; June 1st. H. C. Hook ; July 8th. R. A. Ford ; July 10th. A. M. Falconer ; July 13th. N. D. Lees ; July 17th. Sec. Lieuts. (late Gen. List, R.F.C., on prob.) confirmed in their rank as Sec. Lieuts. :—R. S. McCormac ; April 11th. E. Bushell, C. S. Armishaw ; July 27th. R. Hall (Temp. Sec. Lieut., Leic. R.) is granted a temp. commission as Sec. Lieut. ; May 1st. Cadets granted temp. commissions as Sec. Lieuts. :—R. E. Lane ; April 1st. H. W. Prickett ; May 10th. Sec. Lieut. J. G. Williams relinquishes his commission on account of ill-health, and is granted the hon. rank of Sec. Lieut. ; Aug. 3rd.

**Medical Branch.**

J. A. Giles is granted a temp. commission as Capt., J. D. George is granted a temp. commission as Lieut. ; Aug. 1st.

**Memoranda.**

The following Capt. are granted the temp. rank of Maj., but without the pay and allowances of that rank, whilst specially employed :—W. R. Mackenzie, D.S.C., J. Weston ; Aug. 3rd. The following are granted the temp. rank of Capt. but without the pay and allowances of that rank, whilst specially employed :—Sec. Lieut. (Hon. Lieut.) A. L. C. Fuller, Lieut. H. E. Went ; Aug. 3rd. The date of appointment of the following officers is April 1st, and not as stated in *Gazette* of July 23rd :—As Lieut.-Cols.—W. D. Beatty, H. T. Tizard. As Capt.—J. C. Briggs, R. C. Gallop, P. M. E. Impey, L. B. W. Jolley. The notification of July 23rd concerning the following officers is cancelled :—Maj. C. L. Hardy, Capt. H. B. Dresser, Capt. F. M. Williams. The notification of July 5th regarding Lieut.-Col. S. H. B. Harris is cancelled.

**Royal Flying Corps (Military Wing).**

*London Gazette Supplement, July 29th.*

*General List.*—Capt. L. G. Cloete, S. Afr. Forces, to be Temp. Capt. ; Aug.

4th, 1917. The notification in *Gazette*, March 13th, regarding Cadet E. G. Stott is cancelled.

*London Gazette Supplement, July 30th.*

*Flying Officers.*—Temp. Sec. Lieuts. (on prob.), Gen. List, and to be confirmed in their rank :—W. L. Milburn ; March 9th. C. B. Dove ; March 20th. W. K. Jenne ; March 22nd. W. J. Cox ; March 29th.

*Equipment Officers, 3rd Class.*—Temp. Sec. Lieut. (on prob.) C. E. Goodrum, Gen. List, and to be confirmed in his rank ; March 8th.

*London Gazette Supplement, August 1st.*

*General List.*—The following Corps. from Suss. R., to be Temp. Sec. Lieuts. :—A. Gammon ; March 2nd. F. W. G. Goodwin ; March 13th.

*London Gazette, August 2nd.*

**Special Appointments.**

(Graded for pay "F.F.") R. Warrant, July 9th, whilst commanding a squadron of an Officer Cadet Bn., R.F.C.)—Capt. G. L. Watson, W. York R., T.F., a Flying Officer (Observer), vice Capt. N. G. Darnell, R. Innis. Fus. ; Jan. 24th.

(Graded for pay "F.F.") R. Warrant, July 9th, whilst commanding a squadron of an Officers Tech. Trg. Wing, R.F.C.)—Lieut. G. W. Cox, R. Highrs., T.F., an Equipment Officer, 3rd Cl., and to be Temp. Capt. whilst so employed ; Feb. 15th.

*Squadron Commander.*—Capt. M. G. B. Copeman, Leic. M., from Flight-Comdr. and to be Temp. Maj. while so employed (from Jan. 1st to March 31st).

*Flying Officers.*—Sec. Lieut. E. Mills, R.A., and to be secd. ; Feb. 23rd. Temp. Sec. Lieuts. (on prob.), Gen. List, and to be confirmed in their rank :—F. A. Black ; Dec. 19th, 1917. R. A. Arnott ; March 23rd.

*Flying Officers (Observers).*—Lieut. E. L. O'Leary, Canadian F.A. ; Feb. 21st, seniority Nov. 20th, 1917. Temp. Lieut. A. Lomax, R.A., seniority Nov. 20th, 1917, and to be transferred to R.F.C. Gen. List, Lieut. T. J. Molony, R.W. Kent R., Spec. Res., seniority Nov. 27th, 1917, and to be secd., Lieut. T. B. M. Brown, R.F.A., Spec. Res., seniority from Dec. 5th, 1917 ; March 8th. Lieut. W. A. B. Bussard, R.A., and to be secd. ; March 25th, seniority Dec. 5th, 1917. Temp. Sec. Lieuts., Gen. List :—N. B. Arbuthnot, W. A. Golding, H. Sinclair, C. F. Straghan ; May 17th, 1917.

*Equipment Officer, 2nd Class.*—Sec. Lieut. G. W. M. Whitton, Spec. Res., from an Experimental Officer, 3rd Cl. (graded as an Equipment Officer, 3rd Cl.), and to be Temp. Lieut. whilst so employed ; Dec. 14th, 1917.

## AVIATION IN PARLIAMENT.

**Flying Over Towns.**

MR. GILBERT in the House of Commons on July 29th asked the Under-Secretary of State for the Air Ministry whether his attention has been called to the many recent accidents through low flying of airmen over towns ; and whether he can issue instructions to all air pilots to stop this practice in future ?

Major Baird : Air Ministry Orders prohibit low flying over towns, and serious disciplinary action is taken against any pilot who is known to have avoidably infringed them.

**Flying Over Lincoln Meeting.**

MR. SNOWDEN on July 30th asked the Under-Secretary of State for the Air Ministry if he will say by whose authority Capt. Boothby was sent up in an aeroplane on Sunday, July 21st, on West Common, Lincoln, during a demonstration of discharged men, when he flew over the meeting at a low height, making the holding of the meeting impossible ; whether Capt. Boothby is a member of the Comrades of the Great War Association ; and what steps it is proposed to take to prevent men of the Air Service from using Government aeroplanes and Government petrol to break up meetings of discharged soldiers ?

Maj. Baird : The records of the R.A.F. do not show the name of Capt. Boothby. I am informed that an officer flying in Lincoln on the date in question was compelled by the direction of the wind and in order to effect a landing to fly very low

over West Common, where a demonstration was being held. There was no intention of interfering with the meeting.

**Bombing of Etaples Hospital.**

COL. WEDGWOOD on July 31st asked the Under-Secretary of State for War whether he is aware that the German Government are now justifying the bombing of the Etaples Hospital on the night of May 19th-20th by the allegation that the Red Cross was not shown ; and will he inquire into and expose this statement ?

Mr. Macpherson : I am aware that the German Government are justifying the bombing of Etaples Hospital on the night of May 19th-20th by the allegation that the Red Cross was not shown, and I have seen in a German newspaper photographs published by them with the intention of proving that the Red Cross sign did not exist on May 21st, but did exist in large numbers on the 27th. German photographs of this nature, as we have reason to know, are never conclusive. In any case the hospitals were bombed on the night of May 31st-June 1st in spite of the Red Cross signs, which German evidence shows to have been in existence on May 27th.

Col. Wedgwood : The right hon. gentleman is satisfied that the Red Cross sign was shown on the 19th ?

Mr. Macpherson : Am I personally satisfied ? Yes.

## THE CELLULOSE ACETATE MONOPOLY.

**Cellulose Acetate.**

SIR F. HALL, on August 5th, asked the Under-Secretary of State for the Air Ministry if his attention has been called to the criticism passed by the Select Committee on National Expenditure in their last Report as to the action taken by the Department responsible for financing the Cellonite Company, of Basle, and the refusal to arrange with British companies for the supply of cellulose acetate ; what action is proposed to be taken in view of the terms of such Report ; and if he can state what amount of German capital is invested in the Basle company which has had such preference over British companies in this matter ?

Mr. Kellaway : The original contract referred to by my hon. Friend was made by the War Office and was inherited by the Ministry of Munitions when it became responsible for aircraft production in 1917. The Ministry of Munitions' dealings have been with the British Cellulose Company, and no financial assistance has been given to the Cellonite Company, of Basle. I have no information as to the amount of German capital invested in that company. I desire to add that, in view of the Select Committee's Report, I am appointing a Committee to consider and report to me on the criticisms and recommendations made therein. Until I receive the Report I cannot make any statement as to future action.

**British Cellulose Company.**

MR. HOLT asked the President of the Board of Trade what are the names and addresses of the holders of the original 160,000 shares of 6d. each in the British Cellulose Company.

Sir A. Stanley : I am informed that 159,999 shares of the British Cellulose and Chemical Manufacturing Company, Ltd., are held by the British Cellulose and Chemical Manufacturing (Parent) Company, Ltd., of 8, Waterloo Place, the remaining share being held by Mr. F. G. Browne, of 108, Goodrich Road, East Dulwich.

**The Supply of Cellulose Acetate.**

SIR WILLIAM BULL in the debate on the Consolidated Fund Bill on August 5th said : I want to call the attention to the House to the subject of the fifth Report of the Sub-committee on the Ministry of Munitions, in regard to the arrangements of the Ministry for obtaining cellulose acetate. The bulk of the Report is devoted to certain allegations against the British Cellulose Company, and they are felt very deeply. I have decided to ask the House to listen to me for a brief time in regard to this matter. Immediately the Report was issued the company wrote to the Ministry of Munitions asking for a full investigation into the charges it contained ; it was asked that evidence should be given, and that the papers should be unreservedly submitted for investigation. The Parliamentary Secretary for the Ministry of Munitions promised investigation. A letter was sent to the Press asking the public to suspend judgment, and a majority of the papers freely inserted it ; but the *Daily Chronicle* did not do so, and it published this morning a long article dealing with the affairs of the British Cellulose Company. The company feel that they have not been

treated fairly in this matter. In the first place, the hon. Member for Greenock, the Chairman of the Sub-committee, took upon himself a rather unusual course. The Report was dated the 23rd, and on Friday, the 26th, copies were placed in the Vote Office ; yet on the following morning the whole of the Report, or the greater part of it, appeared in the Glasgow papers, and on further inquiries being made by the company it was discovered that the Chairman had taken the unusual course of sending a typewritten letter, signed by his own hand, to various newspapers, underlining in blue pencil certain passages dealing with the affairs of the British Cellulose Company. That company is composed of men of high positions who hold important posts in various large concerns. I will give the names of two or three who are members of that board. There is Sir Harry Macgowan, managing director of Nobel's ; Sir Lionel Phillips, so well known in connection with South Africa ; Sir M. Mitchell-Thomson, who is also very well known in Scotland, being a railway director, bank director ; and others.

All these people are connected with this company, and apparently on the Chairman's *ipse dixit*, certain statements were made in the fifth Report. The allegations against them are unreasonable delay—they say they have a complete answer to that—that they had an extravagant capital expenditure, poor quality of product, and excessive profits. All they ask is that an independent tribunal should try their case and that the evidence should be taken upon oath. They were never aware, when the Committee was sitting, that they were on trial at all, but they understand now that some 34 witnesses were called. When they were asked whether they would give evidence they said they would be only too pleased to do so and to help the Committee in any way possible. Questions were put, and Colonel Grant Morden asked, "Are we on our trial ?" The Chairman of the Committee, so I understand, said, "Certainly not. We are merely considering the Ministry of Munitions." Colonel Grant Morden said, "If I am on my trial, I should like to be represented by solicitors or counsel," and the Chairman said, "Not at all ; we are only asking certain questions with a view to testing the efficiency of the Ministry of Munitions." The gentlemen forming this company thought they were doing an extremely patriotic work indeed in getting this acetate of cellulose into the country. It is an extraordinary invention, first invented by an Englishman named Cross about 40 years ago, but it was only a laboratory triumph, and it was not until a few years ago that some Swiss chemists named Dreyfus succeeded in turning it into a valuable commodity, which will become more and more valuable as the years go on. This is one of the constituents of dope, and dope is the material which is necessary to coat aeroplanes with. Dope has to have certain extraordinary qualities. It has to be heat-proof, water-proof, frost-proof, it has to be transparent, it has to be to a certain extent elastic, and it also has to be damp-proof and wet proof. All these things are necessary for the purpose of coating the wings of aeroplanes, and no aeroplane can fly unless it has got this kind of material for covering its wings.

It was due to Colonel Grant Morden, who discovered that the Dreyfuses were able to make this peculiar material which was necessary, that it was brought over to this country. I understand that when first put before the War Office



they pooh-poohed the idea of any large supply of dope being required in this country. They thought a quarter of a ton per day of acetate of cellulose would be ample for the purpose, but I understand that ever since that they have been pressing more and more, until they are now pressing this company for something like 60 or 80 tons a week. Therefore, what was first a small company, in which £120,000 was put up by debentures, with £4,000 of capital in sixpenny shares, has naturally grown, and the public are interested in seeing that these 6d. shares are now worth £14 10s. Nothing of the kind. They are exactly worth what they were when they were 6d., and no more. I understand from inquiries I have made that the £4,000 of shares were made 6d. shares for division amongst those persons who put up the £120,000 worth of money in debentures. It was an easy way of dividing them into small sums, and there was no expectation that any profit would be made. No profit has been made, but from that report you would hardly think that possible. No excess profit has been made, and no profit at all. I understand from the accountant, who in a very short time will be able to get out the balance-sheet, that there is a considerable loss at present, and has been ever since the company was established, in making this material. These gentlemen, out of their own money, found over a million and a half with which to set up works at the earnest request of the Minister of Munitions to turn out this valuable product. Their works near Derby are a mile in length and half a mile broad, and they have been put up at a cost of approximately three millions of money. That has been done absolutely at the urgent request of the Government and the particular Department, who have again and again begged that they should turn out more and more of this peculiar composition.

That is the whole story. At first it was quite a small thing, and £120,000 in debentures and £4,000 in sixpenny shares seemed to be a right kind of size for the company. All the men connected with it were men connected with large concerns, and they did not trouble about increasing it in any way. No shares have been sold on the Stock Exchange whatever. They have kept them amongst themselves, and when they wanted money, money was advanced. One of the chief banks in London, I believe, advanced £900,000, and also one of the firms connected with the concern put in £500,000. Therefore, these shares might just as well have been £50 shares. It makes no difference. It was only to show what the company was worth, and for the purpose of paying back the debts to the bank and the other firm the alteration in the company took place whereby an arbitrary figure of £14 10s. was chosen as the amount at which the shares should stand. I think the Report of the Committee, which has been criticised in many respects like the Sixth Report of the Committee, does not fairly represent the case of the Cellulose Company. There are a great many things in the company's favour that have never been mentioned. They had not the slightest idea that their rivals in trade were being examined behind their backs and giving evidence which was totally irreconcilable with the facts, which can be disclosed from their books. They know the House of Commons is the fairest inquest in the world, and all they ask the House of Commons to do is to suspend judgment, and they ask the Press also not to make comments upon the matter, until this Committee of investigation has thoroughly examined it on oath.

I am asked to say that every help that the company can give, by means of their books, or their officials, or their records, they will give to such an investigation, but they do complain that the Chairman of the Committee should have taken upon himself rather more than he ought to have done in absolutely writing to the Press a letter, and under-marking in blue all the way through the Report everything that affected the British Cellulose Company, and asking, I believe, the editors of those papers to comment upon it. That may or may not have been a judicial act, but all the company asks that judgment should be suspended until their side of the case has been heard. They have put in a detailed answer to the Report of the Committee to-night to the Minister in charge—namely, the Minister of Munitions—and they are willing to back up that reply in every way that this investigation thinks fit. I think I have said enough to the House to show that there is another side to the question. These men have honourable careers behind them. They are men of large positions, who have done everything they can to supply the Government with what was absolutely necessary, and they feel that they have been unjustly attacked in this Report. I should like to say something about cellulose. I am no chemist, but it is an extraordinary invention, this acetate of cellulose. The base of it apparently is cotton or paper. It is then torn to pieces, ground up, and mixed with this chemical until it practically becomes a flour. It is then turned back from being something of a floury nature until it is in the form of a jelly and transparent. They have practically solved the difficulty which Mr. H. G. Wells put in one of his books as one of the first and most desirable things that ought to be invented after the War, namely, glass that will bend, and they have practically turned out glass that will bend in any direction. In addition, it will make a synthetic silk of the finest quality, and I have got some in my pocket now. Further, it makes unbreakable films, and Messrs. Pathé Frères use nothing else than cellulose, and, as I have said, it is absolutely necessary for the purposes of dope this company feels very strongly the remarks which have been made in this Report, and they ask for justice at the hands of the House of Commons.

Colonel Collins: The right hon. Gentleman has asked the House to suspend judgment on the Report issued by the Sub-committee on the Ministry of Munitions. I have the honour to be the Chairman of that Committee, and I am sure that the request of the right hon. Gentleman will be appreciated and accepted by my Committee. In view of his request, and of the statement made at Question Time this afternoon, that the Government proposes to set up a Committee of Inquiry into this case, I have no intention of now speaking to justify the Report, but I can say that, at the proper time, my colleagues and I will attempt to justify every statement therein made. At the beginning of his speech the right hon. Member referred to my action when the Report was issued, and rather inferred that I had issued a copy of the Report to the Press before it was made public. That I desire to contradict emphatically. On the day the Report was issued I sent to the Vote Office for several copies of the Report. I have heard that the right hon. Gentleman has suggested to Mr. Speaker that the substance of the Report was published in the *Glasgow Herald* on the day that the Report was issued in London.

Sir W. Bull: No; the Report was issued in London at two o'clock. It was then in the Vote Office, and it appeared almost in full in *Glasgow* on the next morning.

Colonel Collins: The Report was issued in London at two p.m., and appeared in a *Glasgow* paper the following morning; that is only natural, because it would be sent along the wires in the afternoon. I desire to deal with that point, because it had been stated to Mr. Speaker that I infringed the privileges of the House by sending a copy of this Report to the Press before it was issued to Members of this House. I did not take any such action, and I am glad the right hon. Gentleman has seen fit to withdraw any suggestion which he conveyed to Mr. Speaker in the earlier part of the afternoon. The second reference to myself consisted in the fact that, as Chairman of the Committee, I sent a copy of the Report to the Press with certain sentences specially marked. I admit at once that I did so. It was a long Report, and I conceived it my duty, as I shall conceive it my duty in future, to see that the substance of the Report is referred to in the Press. The Report, as I say, was a long one, and unless someone had taken the trouble to mark the salient factors it might not have been dealt with satisfactorily by the Press at short notice. The right hon. Gentleman seemed to think that I was animated by some bias against the company. But I marked the Report carefully myself and I purposely omitted marking any reference to two gentlemen, one an officer and the other Sir Trevor Dawson, to whom reference has been made here. If the right hon. Gentleman had gone through the marked copy he would have seen that I did not mark those names at all. I

might further mention there is a reference to myself in page 2 of the Report in a complimentary sense, and I did not mark that reference. The reference in question was in the Report presented to the House by a Sub-committee of the War Office. My sole object in issuing this Report and marking the paragraphs was to draw public attention to these matters. My Committee had spent a good deal of time on this question, and I considered it advisable to take the action I did under the circumstances. It might be said that I have exceeded my duty in so doing, but I think in view of the action of the Government, and in view of the general practice of hon. Members when sending a copy to the Press to mark it for their convenience and in order to draw attention to the salient facts—in so doing I was not doing anything unusual nor was I attempting to cast blame or otherwise on the persons mentioned in the paragraphs. I only desire to make that personal explanation. I hope the House will accept my assurance that I was only influenced, in issuing the Report and marking it, by the public interest and by a desire to draw the attention of the public to the work which the members of the Sub-committee had been doing for many months—a thankless and difficult task. We have endeavoured in our Report to hold the balance fairly between all the parties, and when the Committee appointed by the Ministry of Munitions comes to investigate the Report I feel confident myself it will be found that we have in this Report dealt justly with all the interests concerned.

The Parliamentary Secretary to the Ministry of Munitions (Mr. Kellaway): It is not necessary for me to enter into the controversy which has arisen between my two hon. friends who have addressed the House, but I think it desirable that I should state at slightly fuller length than I was able to do at Question Time the course which the Ministry of Munitions intends to adopt on this matter. This contract, the centre of so much criticism, was entered into early in the War by the War Office. The country then found itself in this position, that it was dependent for its output of aeroplanes on a particular ingredient, small in bulk, but absolutely essential to the carrying out of our aeroplane programme. It found that this product was not being made in this country and that we were entirely dependent on imported supplies of cellulose acetate. The War Office at that time decided that if it was at all possible the necessary arrangements should be made for producing cellulose acetate in this country. It was obviously undesirable that for an essential material of this kind this country should be dependent on foreign sources. The War Office then got into touch with Dr. Dreyfus and his company, who were one of the two firms on the Continent among neutral and Allied nations who were able to produce cellulose acetate, and, as a result of the long negotiations that took place, a contract was entered into between the War Office and Dr. Dreyfus as representing this neutral company. They made a contract under which Dr. Dreyfus was to erect works in this country which would be capable of manufacturing cellulose acetates.

It is not for me to defend, and I have no intention of doing so, the action taken by the War Office at that time. The essential thing was that the stuff should be produced in this country. It might have been possible, with all the information we now have, to have adopted some better course. It might have been possible to have had two or three alternative sources of supply, but these happened to be the only people, so the War Office were advised, who were capable of producing cellulose acetate of the necessary quantity, and this contract they made with them. Whether it was the most ideal contract that could have been made or no, I am not concerned to state, but that contract was entered into with that motive, and the motive was a good one. It was not until February, 1917, that the Ministry of Munitions had any concern at all in this business. In February, 1917, the Ministry of Munitions took over the Aircraft Production Department, and it was then that the Ministry had to take over the contract then made, and the responsibilities attaching to that contract. Negotiations went on for some time. The demand for cellulose acetate went up by leaps and bounds. The programme of aircraft production multiplied 20 times compared with what it was at the time when the War Office first entered on these negotiations, and it was inevitable in those circumstances that the expenditure should multiply to a degree which was not anticipated when the original estimates were made. The question of whether the Ministry were right in following up that contract, and in adhering to the process, which was first adopted by the War Office, is one about which there might be some controversy. But about this there is no controversy, that the particular process which was adopted for this country—that is what I may call the Dreyfus process—has since been adopted by America, France, and Italy, and in America there is the Kodak Company in existence which the Government have been told might have been an alternative source of supply, and in France the Usines du Rhône Company. Therefore, these other countries have adopted the same process that has been adopted to this country, namely, the Dreyfus process, and, whatever may be the defence in regard to this contract, this at any rate is certain, that at no time has the great aeroplane programme of this country—20 times what it was at the beginning of the war—been held up for lack of this essential material.

Those, I admit, are only large considerations which do not touch, to any great extent, the particular criticisms made by the Select Committee over which my hon. and gallant friend presided. But they are criticisms which should be in the mind of Parliament and in the mind of the country in view of the sweeping criticism—something amounting to denunciation—which has been indulged in in certain quarters. I devoted my week-end to the study of the Report, and of such documents as I was able to read during the time, and, as a result of that study, I came to the conclusion that, whilst these large considerations might be held fairly to justify the broad lines which the Government have pursued, still, in view of the conclusions of the Committee and certain statements made in that Report, we could not allow the matter to rest where it then was, and, as a result of a conversation I had this morning with my right hon. friend the Minister of Munitions, we agreed that we would immediately set up in the Ministry a strong competent body to examine the three recommendations which the Select Committee has made, and to report at the earliest possible moment in regard to those recommendations. I make no criticism whatever of the Report of this Select Committee. On the contrary, I think the Ministry of Munitions is under a debt of obligation, as indeed is Parliament, to the Select Committee for the manner in which it examined every detail of this contract. I am not concerned with what may be the attitude of the company towards the Select Committee, but it was impossible, in my view, that the Ministry of Munitions, in view of a report of that kind, should let the matter rest. That Committee will be set up in the course of the next two or three days. It will be given terms of reference to confine it to the recommendations which the Select Committee has made, and, as soon as we have received the Report, we shall not hesitate to take such action as may be called for.

Mr. Roch: Will the Departmental Committee's Report be available to the public?

Mr. Kellaway: As it will be a Departmental Committee Report, I should not care to say at the moment whether it will be made public. But I should say that all conclusions and the action taken thereon will be made public. I thought it necessary to make these observations, and especially those in the first part of my remarks, because I should not like the House or the country to suppose that this contract has been of such a nature as could not be defended on broad lines. The broad considerations are those which I have put. But I also recognise, as I have shown, that there may be other considerations which should be taken into account, which, so far, have not been taken into account. I am most anxious that the Ministry, and especially the financial side, should give Parliament the assurance that in regard to all these contracts involving great expenditure the most scrupulous care should be taken to see that the country gets really value for its expenditure, and, so far as my hon. and gallant



friend's Committee is concerned, I personally feel that Parliament and the Ministry are under an obligation to him and his fellow members for the spirit and the thoroughness with which they have made this examination.

Mr. Holt: I am exceedingly pleased to know the Ministry of Munitions means to have a thorough investigation. I trust that the terms of reference will be wide enough to investigate the whole matter. There are several aspects of the case. There is, first of all, the technical question. If you follow the Report of the Select Committee, assuming that Report to be correct, there can be no question that this company failed lamentably and scandalously in their promises and assurances to the Government.

Sir W. Bull: That they absolutely deny.

Mr. Holt: The right hon. Gentleman will, no doubt, on behalf of the company, deny that, but that is one of the questions that ought to be investigated.

Sir W. Bull: Exactly.

Mr. Holt: Promises were made which were entirely unfulfilled. Negotiations began in July, 1915, and were apparently concluded in September, 1915, but according to this Report it was July, 1917, before anything substantial was produced, and it was April, 1918, before the goods were coming in in quantities. If there is an investigation we ought to know why, assuming it to be, as I have no doubt it was, an article of very great importance to the conduct of the war, such a very long period of time elapsed between the time when the contract was set in hand and the time when any goods whatever were delivered. We certainly ought to have much more information than we have got as to how it was that various reputable concerns which, *prima facie*, were more reputable were not encouraged to take up production in this matter. We ought to have got more information about that. I do think, also, we want more information about the constitution of this company. There is no use shutting our eyes to the fact that the financial story of this company is an exceedingly uncomfortable one. I know nothing whatever, I frankly admit about the Stock Exchange and the floating of companies, but when I discover that shares which were valued at 6d. have come to be worth £14 10s., I think everybody who knows anything at all about it would like an explanation, though it is explained to me that there is no particular significance attached to the change.

Sir W. Bull: Anybody can discover what it represents.

Mr. Holt: I understand that if one day the share is called a sixpenny share and the next day a £14 10s. share, that it is simply for the convenience of it.

Sir W. Bull: I do not want to bore the House with these details, but the £120,000 is now £3,000,000. As I explained, the shares are merely for the purpose of showing how the matter stands.

Mr. Holt: I want to try to understand the explanation and how the hon. gentleman opposite puts it. I understand that what has happened is this: that every person who originally put in 6d. has since contributed £14 9s. 6d. to that sixpence?

Sir W. Bull: The money has gone into the company and has been spent, not the money of the Government, but the money of these people.

Mr. Holt: If the person who put in sixpence now finds his share is worth £14 10s., all I can say is that the explanation is not adequate, is not satisfactory. If that is not what the gentleman opposite means I fail to understand what is exactly his explanation. If somebody has found the money it may be that the explanation of the hon. gentleman who spoke the other evening is the right one and that, after all, whether or no some peculiar bargains were made does not matter so very much so long as the directors of the company did not take the taxpayers' money. But the taxpayers ought to know something about it. Are we to understand that the whole of this bargain about not paying the Excess Profits Tax amounts to nothing, and that there was never any profits? We should look for a very full, and a very close and clear investigation. There is another matter about which I should like to know. I want to know what is the connection between this company and the Ministry of Information? I think that the gentleman who is a great light in this company, Mr. C. G. Brown, of the Prudential Trust Company of Canada, and who produced the £120,000, is one of the managers of a Department in the Ministry of Propaganda. I find also that another, an officer of the Ministry of Propaganda, was later a director of the bank with which the Prudential Trust of Canada kept their account. This is what I have discovered in my own investigation into books of reference and so on that can be had in the Library of the House. I should like to have all these matters thoroughly investigated. It is not altogether a pleasant transaction. We have had a list of shareholders published by the *Daily Chronicle*. There are some very reputable gentlemen in this list, and some persons not altogether so. It is not altogether pleasant to the man in the street to see some of these names, and about this matter we should like to know a good deal more. All this explanation of Colonel Grant Morden is very unsatisfactory. The right hon. Gentleman referred to him as a gentleman who introduced this process into England. We have had other very reputable people in touch with these matters which were not carried on next door to Germany. We ought to have a very full and complete investigation of the whole matter.

Is everyone satisfied that these Swiss manufacturers are entirely above suspicion? We have been told that every person who is not a natural-born British subject has got to have a special investigation made into his character; yet we make no special investigation into the character of any of these people who are concerned in the matters we are discussing. After all, I should like to remind the House that if you are going to have dangerous spying, and dangerous communications with the enemy, these things are not going to be done by some wretched barber or butcher of German origin living in a miserable suburb of London or Liverpool. These are not the people. The thing is more likely to happen in connection with some international syndicate which has got the opportunity to do it. Where are you going to find these things done than by those who have access to all sorts of confidential information? These are the people for whom you really want to be on the look out. On the other hand, here are people whose financial methods are very queer and peculiar, who have every opportunity, if they desire, to get information through to the enemy. It is these great international syndicates who have the opportunity of doing harm—the people you would not suspect, the people above suspicion! That is the direction in which you should look. When you find people who have in this way carried on business by peculiar methods, failing to deliver the goods, and at the same time carrying on financial transactions of a very dubious character, surely the time has come that there should be a most thorough, complete, and searching investigation into the whole operation?—I hope such investigation will take place. I hope it will prove that these people are in all respects absolutely above suspicion. But I must say that if they do, or have come under severe animadversion, that they have only themselves to thank for it. The transactions right through are not of the character which ordinary business men are accustomed to be associated with. It is not the usual thing to have great syndicates set up mainly by people who have got nothing whatever to do with the business. Surely there were plenty of respectable chemical manufacturers in every direction, and yet we have this Swiss-Canadian Syndicate, with its peculiar and extraordinary relations with the War Office. Perhaps the hon. gentleman opposite will be able to give the names that will be appointed on the Committee?

Mr. Kellaway: I do not know whether I can. It was only this morning that we came to a decision to appoint the Committee.

Mr. Herbert Samuel: Can we have the names before the Adjournment?

Mr. Kellaway: It is a Departmental Committee, but I will see what can be done.

Mr. Holt: I trust it will be a very strong Committee. It ought, I think, to be more than a Departmental Committee. This Committee is to investigate allegations made by a Committee of this House, and we ought to have the power

to compel witnesses to attend and produce papers and to have an examination on oath. Nothing less than that will satisfy us.

Mr. Kellaway: The recommendations of the Select Committee are our recommendations, and we think the Ministry of Munitions should consider them. That is exactly what we propose to do. We propose to act on the recommendation of the Committee and to consider those recommendations, and we intend that there should be a searching examination.

Mr. Holt: We do not want a Departmental Committee simply to consider the recommendations of the Committee, because I understand the facts are disputed. You want a Committee which is capable of making a proper judicial investigation of what is going on and what has been going on, and which can really get to the bottom of matters, for this subject has a most unsavoury smell. It may be capable of explanation in a thoroughly satisfactory way, but it does not look nice at present, and the bad impression which has undoubtedly been given to the public will not be got rid of by any hole-and-corner investigation. It must be a thoroughly drastic inquiry, and unless that is done there may remain something which may possibly be very unfair to the company and an impression that something very improper and scandalous has taken place.

Mr. Herbert Samuel: I do not desire to go into the merits of the question under discussion, but I think we should have it stated a little more clearly what is the action which the Government really intend to take. There are two points in question, one comparatively narrow and the other much wider. The narrower point is what the Ministry of Munitions is going to do with regard to obtaining the supply of acetate. That is a single question to be decided on the merits of the particular case. The other point upon which the House has expressed anxiety is whether there is to be a free investigation into the history of the events which have taken place, the constitution of this company and the financial methods adopted and all the other aspects of the case. I understand that, so far, the Ministry of Munitions have decided to hold an inquiry only into the narrower point. Clearly that will not satisfy the company, in fact, the company would not have any *locus standi* to explain any of these transactions, if the point is simply whether the particular factory existing is to be taken over by the Ministry or not. I doubt whether that would satisfy the House. If there is to be a further inquiry, which one might describe as an appeal by the company from the decision of the Report of the Select Committee, I hardly think it ought to be an appeal from the Select Committee to a certain number of officials of the Department.

With regard to the Select Committee itself and its work, we were obliged, owing to the magnitude of the task, which has been placed upon our shoulders by this House, to devolve some of our work on to Sub-Committees, and by no other means would it have been possible for 26 Members to examine so many Departments of State. The Sub-Committee which has dealt recently with the Ministry of Munitions and this contract has been described in one quarter as consisting entirely of lawyers. As a matter of fact, it consisted of two business men, one other Member who is a chartered accountant, one who is a stockbroker, and one who is a lawyer. They gave an infinity of pains to this contract, and held a large number of meetings, and they were unanimous in regard to the Report presented to the Select Committee. The Select Committee heard the members of the Sub-Committee, examined their Report, and endorsed it and presented it to this House. In these circumstances until some other competent tribunal has examined this question more thoroughly—I do not know whether it is intended that counsel should be heard—I think the House and the public will be disposed to accept as accurate the statements in the recommendations of the Report.

Colonel Gretton: I have been waiting to hear some further expression of opinion on this question. I do not think a Departmental Committee can satisfactorily deal with this controversy. It would hardly be possible to make a close examination into the whole of these transactions without examining the whole of the period in which the Ministry was involved. This is one of the subjects in regard to which a full and searching investigation ought to be made, and if it is undertaken by a Departmental Committee the facts might never reach the knowledge of this House, and their Report would always be open to suspicion. I suggest that in the interests of everyone concerned there should be a certain judicial inquiry before which witnesses could be examined on oath. I have no bias in this matter, but I have read the Report, and I am convinced that it is a very serious matter which should be gone into further. I have only risen to add my small voice to the request that the Government should abandon the proposal for a Departmental Committee, and should set up instead a Committee which will make a thorough investigation.

Mr. Dillon: I wish to draw attention to the treatment of this question by the representative of the Ministry and the right hon. Gentleman the Member for Hammersmith (Sir W. Bull). I do not understand why the right hon. Member for Hammersmith should have come here with a brief on behalf of this company and constitute himself the impassioned champion of the company.

Sir W. Bull: I can answer that question. The two gentlemen concerned are friends of mine; the papers were attacking them, and I appealed to the House, before deciding the point, to wait until some action can be taken before a more satisfactory tribunal. If this cannot be done, then they must appeal to the Law Courts, unless a satisfactory tribunal is set up which can take evidence on oath. As far as I am concerned I have not a share in this company; I have no interest whatever in it—in fact, I have nothing to do with it.

Mr. Dillon: That is a very strong argument in favour of a tribunal very different from a Departmental Committee. I have listened to this Debate very carefully. The representative of the Ministry of Munitions said that he would confine his defence to the broader considerations and the broader considerations had nothing whatever to do with the financing of this company or with another question of vital importance to which I shall draw attention. He pointed out the importance at a critical moment of getting this cellulose acetate, and he said that the only available method was the Dreyfus method. What had that to do with the conduct of the company which was to operate the Dreyfus method? I understand there were other candidates, well-established British chemical companies of the highest repute, who were in the field for this contract, and what is really at issue is not the value of the Dreyfus method as against any other method, but the character of the company which has got this extremely valuable monopoly conferred upon it by this contract. It is this that appears to those who have read the Report as extremely sinister. There are undoubtedly among the shareholders, and I think even the directors, of the company men who might reasonably be supposed to have a strong pull upon the Government. That is really at the bottom of the uneasiness of the House of Commons. I maintain that if the Government considered it desirable to set up a totally new company and to enter into an immense Government contract with that company, conferring upon it a valuable monopoly which might be the source of great profit, they ought to have been scrupulously careful that there was no shareholder and, still more, no director who had any connection whatsoever with the Government in any kind of way. I have been talking to people who have examined the list of shareholders and they tell me that there are several who answer that description, men who either by family connection or otherwise would be supposed by the public to have a pull on the Government. That is a very sinister and objectionable state of affairs. If it be true, as I am told, that this company got this contract as against other companies who were prepared to make this cellulose acetate on at least equally good terms and that there are concerned in this company men who have connections with the Government, then I say that is a most sinister state of affairs.

The hon. Member for Hammersmith (Colonel Sir W. Bull) is himself connected with the Government. He is the Parliamentary Secretary to the Colonial Secretary, and it does not give one confidence to see a man who is Parliamentary



Secretary to a Minister coming down and engaging in this passionate defence of this extraordinary transaction. I say "passionate defence" because I noticed that the representative of the Ministry of Munitions carefully avoided saying one word in defence of the contract. He said that the War Office made the contract and handed it over to the Ministry of Munitions. All he said was that the contract was made under circumstances of great stress, that the particular method had to be adopted, and that it was a good method. I know nothing about that matter. I dare say it is a good method, but he carefully avoided saying one word in defence of the constitution of the company or of the giving of the contract to it. The hon. Member for Hammersmith not only defends the company passionately, but he defends the transaction. He knows something about the Stock Exchange. Does he really say, when it comes to a question of paying dividends, that it does not matter whether you get your dividends on a 6d. share or on £14 10s. ? He utterly failed to make himself clear. The man in the street will not understand this extraordinary system of inflated capital or be able to follow his explanation. He will take it that if he had a 6d. share and it is suddenly turned into £14 10s. that he had done a good stroke of business. I venture to say that the hon. Member will not be able to remove that impression, and if, in addition, you have published in the newspapers of this country, as you have, the names of men connected with the Government as interested in these transactions, you will create a very ugly impression indeed. There is a good deal of scandal going round, and the Government ought to be extremely careful to avoid giving the public the impression that there is anything wrong. I must say, after listening to this Debate and especially to the speech of the hon. Member for Hammersmith, that I am convinced that it will be the impression of the public that there is something very unpleasant in this whole transaction, and, if the hon. Member who represents the Ministry of Munitions thinks that he can remove that impression by a Departmental Inquiry, he is labouring under the greatest mistake.

Mr. Bonar Law : The two speeches to which I have listened—that of the right hon. Gentleman the Member for the Cleveland Division (Mr. Herbert Samuel), and that of the hon. Member for East Mayo (Mr. Dillon)—raise an issue the importance of which no one can feel more strongly than I do. I am not going to deal with that aspect of the question to which my hon. Friend has mainly directed himself. The House understands the history of this transaction. I

am not defending what took place, but I am explaining. It is very easy long after the event to look upon transactions of this kind and regard them as entirely foolish, but put yourself in the position of those who knew that they must get this particular commodity and must make certain of getting it whatever the price. That is the justification which would be made by those at the War Office who were responsible for the course then taken. I do not need to tell the House that when this transaction came to the Treasury—it came, of course, as an accomplished fact, because in the early days of the War we could not interfere in matters of this kind ; we had to let the Departments take what steps they thought necessary to get these things—we felt, as the Select Committee felt, that it was a contract very difficult to justify. What the Government, therefore, had to do was to make the best arrangement which was possible in view of what happened before, and I think my right hon. Friend the Member for the Cleveland Division will admit, so far as the recommendations of the Select Committee are concerned, that what the Ministry of Munitions have proposed to do from that point of view is sufficient and all that can be done.

But the other issue is a very different one. It raises the suspicion, not of improper finance, for I do not think it is the business of the Government to take up every case of improper finance, and I should not suggest that we should take any action on account of that—unless, indeed, it was so bad that the Public Prosecutor took action, but it raises a suspicion of an entirely different kind. But to speak of the people being connected with the Government, it is very far-fetched to bring that in at all, that men of great business firms have indulged in a kind of finance in order to do business with the Government, which is, in the highest degree, improper. That is the charge. My hon. Friend has a right, it seems to me, to press that this aspect of the case should be sifted in such a way that the real facts should be brought to light. I do think that the House of Commons has a right to ask that the Government should take the steps necessary to secure that result. I think so too. I do not know exactly what sort of tribunal would be best for this purpose ; it is rather difficult to decide right away on that point. It is obvious that it must be a tribunal where evidence can be sifted in the best possible way, and what I would say to the House is, for this is really far more than a Departmental question, that I undertake that an inquiry of that kind will be held, and I hope to be able to announce before the Adjournment the form which I shall recommend for that inquiry.



### A Workman's Error.

AT Tottenham Police Court on Aug. 1st William Benjamin Smith, of Tottenham, and James Harding, of Enfield, were summoned by the Ministry of Munitions for committing certain acts likely to endanger any person using an aeroplane. They were also summoned for doing certain acts calculated to deceive their employers as to the quality of certain material.

It was stated that the men were working on spars for Handley Page machines, and Harding held a square while Smith drilled a hole in an aeroplane spar. The hole was a quarter of an inch out. After discovering their error the defendants stuffed the hole with a plug, and made another hole in the right place. The effect was to reduce the strength of the spar. A Government inspector who detected the mistake asked Smith if he would like to ride on a flying machine containing such a spar, and Smith replied that he would not.

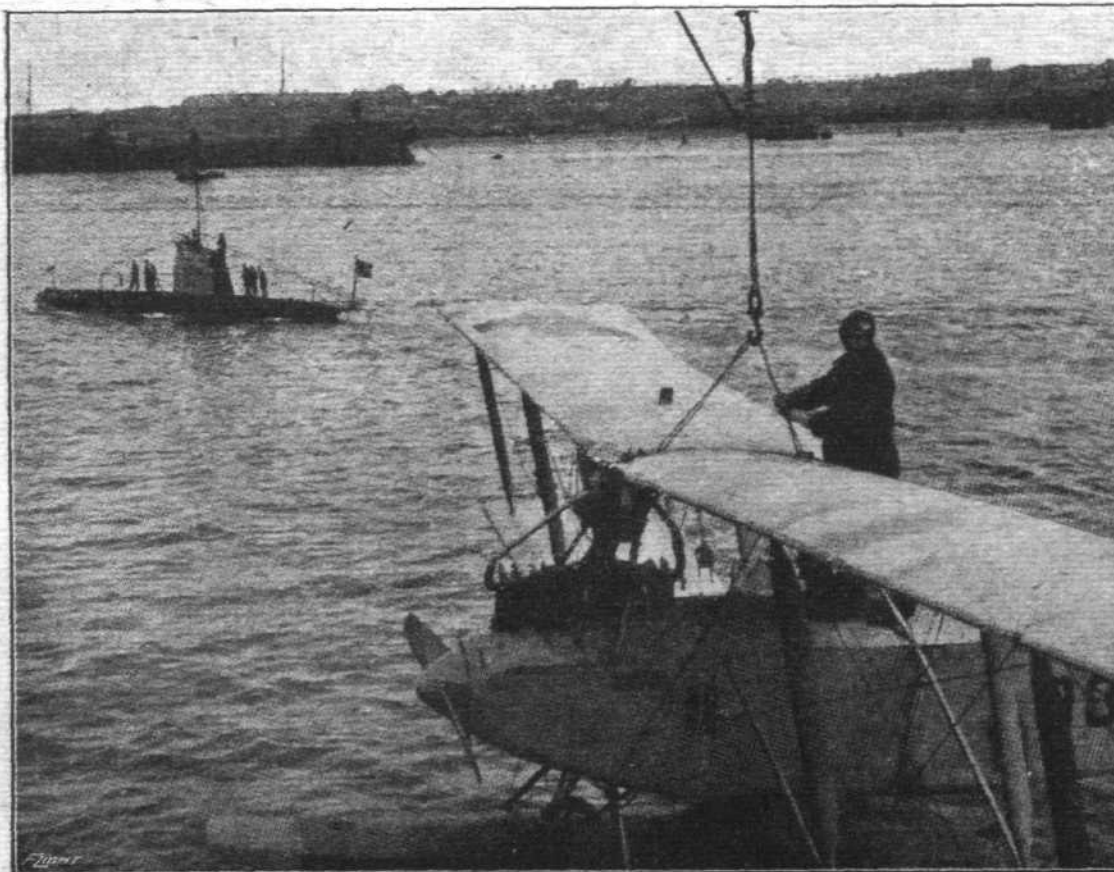
Mr. Rowland Chessum, the proprietor of the factory, said he had repeatedly impressed on his workers the need of exactitude. When he was informed of the incident he called the work people together and again reminded them of the importance of their work. He also dismissed Smith and Harding.

The defence was that the men did not realise that plugging was forbidden on aeroplane work. Smith admitted that it was he, and not Harding, who drilled the hole. Harding only sighted for him.

The defendants were fined £10 4s. each on the first summons, and the second summons was dismissed.

### German Bombs on Holland.

A STATEMENT has been issued by the Dutch Foreign Office, giving details of several recent instances in which German aircraft flew over Dutch territorial waters and were fired on. The Dutch Minister in Berlin has been instructed to make an emphatic protest to the German Government.



Launching a German Seaplane from a Mother Ship.—In the background a U. boat.



# AIRCRAFT WORK AT THE FRONT.

## OFFICIAL INFORMATION.

### British.

On the 28th inst., in spite of low clouds, our aeroplanes were able to carry out several reconnaissances and take many photographs. Ten tons of bombs were distributed between ammunition dumps, railway stations, and billets in the neighbourhood of Douai, Armentières, Bapaume, and Chaulnes. In the early morning there was a certain amount of fighting in the air. Nine hostile machines were brought down, and two hostile balloons shot down in flames. Four of our machines are missing. During the night Bapaume and active hostile batteries north of the Somme were bombed, all our machines returning."

**Palestine.**—Since July 18th five enemy aeroplanes have been destroyed in aerial combats, and on the 25th extensive bombing raids were carried out against the enemy camps about Amman (Hedjaz Railway) and Shumet Nimrin."

**Italian Front.**—The weather, owing to frequent and heavy thunderstorms, has been on the whole unfavourable for flying. Since July 21st the Royal Air Force have destroyed six enemy aircraft. Two of our machines have failed to return."

### War Office, July 29th.

**Headquarters R.A.F., Independent Force, July 30th.**  
On the night of July 29th-30th our machines attacked the railway stations at Offenbourg, Rastatt, and Baden. Stuttgart and Sölingen were also attacked. Three hostile aerodromes and numerous ground targets were bombed, and subjected to machine-gun fire. All our machines returned. On the morning of the 30th inst. our squadrons successfully bombed the railway station at Offenbourg. Good results were obtained. In the course of the combats, three enemy machines were shot down and one other driven down out of control. One of our machines is missing."

**General Headquarters, July 30th.**  
On the 29th inst. ground mist and low visibility interfered with artillery observation, but our bombing and fighting machines carried out their usual work. Eleven tons of bombs were dropped on enemy dumps and billets, and 14 hostile aeroplanes were destroyed with the loss of two of our own machines. During the night, in spite of unfavourable weather conditions, bombs were dropped by us on Bray and Bapaume. All our machines returned."

**Headquarters R.A.F., Independent Force, July 31st.**  
In addition to the attack already reported on the 30th inst., the station at Lahr was bombed. On the night of July 30th-31st our aeroplanes again proceeded to Stuttgart and dropped nearly two tons of bombs on the Bosche Magneto Works, Daimler Works, and railway station. A fire broke out in the station. Several bombs were dropped on Hagenau station and barracks, causing a heavy explosion. Rémilly Junction and two hostile aerodromes were attacked with bombs and machine gun fire. On the morning of July 31st, at 7.30, one of our squadrons attacked Coblenz station. Owing to clouds, observation was impossible. The station and factories at Saarbrücken were subjected to two attacks. The first formation encountered large (? numbers of) hostile scouts before reaching their objective. Bitter fighting ensued, in the course of which four of our machines were shot down. The remainder bombed their objectives, and, on their return journey, were again heavily attacked, losing three more machines. One hostile machine was disabled. The second attack, delivered later, was completely successful. Bursts were observed in a factory. In spite of attacks by hostile scouts, all our machines returned safely."

### General Headquarters, July 31st.

On July 30th haze and ground mist again interfered with observation, but, nevertheless, a large number of successful photographs were taken by us, and over 11 tons of bombs dropped on enemy sidings and dumps. Rather more enemy machines were encountered, 15 being brought down and six driven down out of control. Six of our machines are missing. During the night 3½ tons of bombs were dropped by us without loss. In addition to those already reported, a hostile machine was shot down by infantry fire on the 29th inst."

### War Office, July 31st.

**Balkan Front.**—During the period July 17th-26th we have destroyed seven hostile aeroplanes and brought down three out of control. On July 21st a Greek patrol near Ciftlidzik (three miles west of Demirhisar), captured a few prisoners."

**Headquarters R.A.F., Independent Force, August 1st.**  
On the morning of Aug. 1st one of our bombing squadrons started to bomb Cologne, but, finding it enveloped in clouds, turned and dropped their bombs on the factories of Düren, in one of which a fire broke out. All machines returned. A second formation attacked the railway workshops at Trèves. They were heavily attacked by large numbers of hostile machines. Three of the enemy were destroyed. One of our machines has not returned."

### General Headquarters, August 1st.

On July 31st heavy fighting took place in the air, with the result that 26 enemy machines were brought down and nine others driven down out of control. Four of our machines failed to return. Though observation was again difficult many photographs were taken, and 15 tons of bombs dropped by us with good effect. During the night over 23 tons of bombs were dropped by us without loss of a machine. Several railways, including those at Cambrai and Lille, suffered heavily, many direct hits being obtained and a number of large fires started."

### War Office, August 1st.

**Italian Front.**—During the month of July the British Royal Air Force has destroyed 66 enemy aeroplanes and driven three down out of control. During the same period four of our planes have failed to return."

### General Headquarters, August 2nd.

On August 1st we dropped over 24 tons of bombs during the day. A large number of these were directed on a hostile aerodrome from a very low height in the course of a raid by two of our squadrons. Great damage was done to the hangars and living quarters on the aerodrome. Six hangars and 16 machines were set on fire, and one machine blown to pieces on the ground. Eleven hostile machines were brought down in the course of the day's fighting, and three driven down out of control. One hostile machine was shot down in our lines by anti-aircraft fire, and a German balloon was brought down in flames by our airmen. Two of the enemy night-bombing machines were shot down over their own aerodrome by our night-fighting pilots. Two of our machines are missing. During the night, in spite of unfavourable weather conditions, 10 tons of bombs were dropped by us on railway lines, stations, and aerodromes. The same aerodrome which had been attacked by day was again heavily bombed. All our night-bombing machines returned."

### Admiralty, August 2nd.

Detailed reports have been received from R.A.F. units working with the Navy in the Mediterranean, Adriatic, and the Aegean. Anti-submarine and escort patrols have been well maintained in the Mediterranean and Adriatic. Our Adriatic formations have closely co-operated with the Italian Air Forces in raids on the Austrian naval ports of Cattaro and Durazzo and in the land operations at Avlona. In connection with the latter, one of our machines was forced to land within the enemy lines, but both pilot and observer were rescued the following day on the Allies advancing and capturing an Austrian aerodrome."

### General Headquarters, July 29th.

In the Aegean a constant reconnaissance of the Dardanelles has been maintained. In two raids on Kuleli Burgas, on the Oriental Railway, direct hits were obtained on the railway station, which was much damaged. A raid on Karagatch station and the bridge which carries the Oriental Railway across the Arda resulted in direct hits on the line, close to the bridge, and among rolling stock. A raid on the railway station and bridge at Uzun Keupri resulted in damage to the station buildings. During dawn reconnaissance of the enemy coast north and north-west of Imbros, 13 caigues were observed. Bombs were dropped, damaging two and destroying a third. A new enemy aerodrome at Uzun Keupri was bombed, and photographs show much damage was done, one hangar being completely destroyed. A raid was made at dawn on July 26th on Nagara and at night on Galata. A further raid on these two places was made during the night of July 28th. Over half a ton of bombs was dropped and large fires started. One of our machines failed to return."

The basin and dockyard at Constantinople was successfully bombed just after midnight on July 27th. Full details have not yet been received."

In Home waters during the period July 25th-31st anti-submarine, hostile aircraft, and escort patrols have been maintained. Submarines have been attacked with success. Over 15 tons of bombs have been dropped on objects of military importance at Zeebrugge, Bruges docks, and Ostend. Enemy's shipping has also been bombed, and a direct hit with a 230-lb. bomb obtained on the stern of the leader of four enemy torpedo boat destroyers. Columns of smoke were seen to arise, but mist obscured further observation. Our bombing patrol and escort formations have been attacked by enemy aircraft. Fifteen enemy machines have been destroyed and 12 shot down out of control. Five of our machines have failed to return—one of which is known to have landed in Holland. One of our seaplanes on patrol was shot down in flames. Two of the crew were wounded."

### General Headquarters, August 3rd.

Low clouds and rain prevailed on August 2nd, and work in the air was carried on with great difficulty. Our machines, nevertheless, executed a large number of reconnaissances, and observed for artillery fire whenever the weather permitted. Thirteen tons of bombs were dropped during the day, three tons of which fell on Bruges docks. Very few enemy aircraft were encountered, but two hostile machines were brought down. One enemy balloon was shot down in flames. All our machines returned safely. At night no flying was possible."

### General Headquarters, August 4th.

Rain and low clouds during the greater part of the day interfered with work in the air. Five tons of bombs were dropped by our airmen, and seven hostile machines and one balloon were shot down. In spite of a very dark night, five tons of bombs were dropped by us on the stations of Fives (south-east of Lille) and Steenwerck. Two day-flying aeroplanes and one of our night-bombing machines are missing."

### General Headquarters, August 5th.

Air operations on August 4th were again greatly hampered by clouds and rain. Six hostile machines were brought down by us and one driven down out of control. One hostile balloon was brought down in flames. Some reconnaissance and artillery observation work was carried out, and six and a-half tons of bombs were dropped by our machines. None of our aeroplanes are missing. One of our machines reported missing on the 3rd inst. has now returned. No flying was possible at night."

### French.

#### Paris, July 29th.

**Balkans.**—In air fighting one enemy machine was brought down."

#### Paris, July 30th.

On July 28th and 29th air fighting continued on the battle front between the Aisne and the Marne. On July 28th French and British bombers dropped over 20 tons of projectiles on cantonments and troops on the march in the valleys of the Ardre and the Vesle, the railways stations at Fismes, Compiègne, Mareuil and Bazoches; and the aviation ground at Mont Notre Dame. During the day of July 29th and during the following night they dropped 36 tons on objectives in the same region. Fires and explosions were observed at Fismes, Alincourt, and Bazoches. On July 29th our chasing squadrons engaged in numerous combats, in the course of which 14 German machines were shot down or driven down out of control."

#### Paris, July 31st.

During the day of July 30th French and British crews shot down and drove down out of control 18 enemy aeroplanes and set fire to one captive balloon."

#### Paris, August 1st.

**Balkans.**—French airmen dropped a ton of explosives on the camps of the Devoli valley, and British airmen bombarded Petric Railway Station."

#### Paris, August 2nd.

During the day of July 31st seven German aeroplanes were brought down by our crews. On the same day 22 tons of explosives were dropped on the aviation grounds between the Aisne and the Vesle and on the enemy's cantonments and bivouacs in the valleys of the Ardre and the Vesle."

#### Paris, August 5th.

**Balkans.**—French air squadrons dropped one ton of explosives on the enemy camps in the region of Pogradec, and British airmen bombarded the enemy depôts in the Struma Valley."

### Italian.

#### Rome, July 29th.

In air fighting two enemy aeroplanes were brought down. A third was accounted for by the fire of anti-aircraft artillery."

#### Rome, July 30th.

Aerial activity was intense on both sides. Aviation camps and other military objectives were effectively bombarded in the enemy's lines of communication. Twelve hostile aeroplanes were brought down in air fighting; a 13th machine hit by artillery came down near Asolo."

During the early hours of the morning our Naval Air Service bombarded the military and harbour works of Pola. The attack, which was carried out in force, lasted about two hours. Several fires were observed, especially in the localities where the submarine and aviation stations are situated. Machines sent to reconnoitre after the attack observed dense columns of smoke, a sure proof of the serious nature of these fires. All our machines returned uninjured."

#### Rome, August 1st.

On July 26th a British squadron bombarded Ragorina, Albania, causing a fire to break out in storehouses on the Elbassan Railway. On July 28th and July 30th Italian seaplanes bombarded enemy installations and trenches in the neighbourhood of the Ardenica Monastery. All the Italian airmen returned safely to their bases."

#### Rome, August 3rd.

During air fighting a captive balloon and six hostile aeroplanes were brought down."

### U.S.A.

#### Paris, August 2nd.

Last night our airmen successfully bombed the railroad station and yards at Conflans. Numerous hits were made, causing several fires and one large explosion. All of our machines returned."

#### Paris, August 4th.

On August 3rd our airmen shot down four hostile aeroplanes."



**Belgian.**

"A German aeroplane was shot down in our lines and the airman taken prisoner."

"Sub-Lieut. Coppens yesterday brought down, near Zonnebeke, a German captive balloon in flames, thus achieving his 22nd victory."

**German.**

"Lieut. Loewenhardt obtained his 45th aerial victory."

"Lieut. Loewenhardt obtained his 46th aerial victory."

"Yesterday we shot down 19 aeroplanes in aerial combats. Lieut. Loewenhardt obtained his 47th and 48th aerial victories, and Lieut. Bolle his 27th."

"The enemy lost on the front yesterday 25 aeroplanes in aerial combats and by gunfire from the ground."

"Further, a British squadron of six big battleplanes, on its way to make a raid on Saarbrücken, was destroyed by six of our front and home-chasing forces before it was able to drop its bombs. We shot down another British big battleplane out of a second squadron which followed."

"Yesterday we shot down 14 enemy aeroplanes and four captive balloons. Capt. Berthold obtained his 40th aerial victory. Our bombing machines were very active during the night, and destroyed among other things a big French munition depot north of Chalons."

Havre, August 2nd.

Havre, August 4th.

Berlin, July 29th.

Berlin, July 30th.

Berlin, August 1st.

Berlin, August 2nd.

**"X 100" Raid (August 5th-6th).**

THE following *communiqué* was issued at 1 a.m. on August 6th by the General Officer Commanding-in Chief, Home Forces:—

"Hostile airships approached the East Anglian coast about half-past 9 last night (Monday), but have not penetrated far inland."

The following was issued by the Admiralty at 1.40 p.m. on August 6th:—

"Five enemy airships attempted to cross our coasts last night, but while still at sea were attacked by Royal Air Force contingents working with the Navy. Three were brought to action one of which was shot down in flames 40 miles from the coast, and another was damaged, but probably succeeded in reaching its base."

**Back from Germany.**

THE following officer who was a prisoner of war in Germany has now arrived in England:—

Wilson, Lieut. C. B., M.C., Hussars, attd. R.F.C.

**Air Service Expenditure.**

INTRODUCING the Vote of Credit for £700,000,000 in the House of Commons on Aug. 1st, Mr. Bonar Law, Chancellor of the Exchequer, referring to the expenditure—as compared with estimates—from the beginning of the financial year up to July 13th, said:—

"Looking at the figures more closely, if you take the four fighting forces—the Army, Navy, Munitions, and Air Service—I find there has been under-spending to the extent of £21,500,000. Part of that, to the extent of £4,000,000, is credited to the Air Service. I am glad to say—and the Committee will be pleased to learn this—that that does not mean that there has been any falling-off in the estimated production of material for that Service; on the contrary, that Service has been kept fully up to the Estimate, and this £4,000,000, I am informed, is largely made up of accounts for work which has been done but which has not yet been finally brought to account."

**Overseas Club Aeroplanes.**

By way of marking the opening of the fifth year of the war, the Overseas Club and Patriotic League have presented to the Secretary of State for the Royal Air Force £4,500 to purchase three more aeroplanes. One is a gift from the Shanghai Branch, per Mr. P. Campbell, and the others, from British people overseas, will be known as "Britons Overseas No. 168" and "Britons Overseas No. 169." These three machines bring the number of aircraft subscribed for by the Club's members and their friends to 169, at a cost of over £270,000, which forms part of the grand total of £792,971 contributed for patriotic purposes during the war.

**Count Zeppelin's Shadow.**

"M. MAURICE CHEVREUX, the French naval engineer who claimed to have invented the first Zeppelin, has died in Paris," reported the *Daily Mail* correspondent there on July 31st. "He declared that Germany got to hear of his plans and sent him an invitation, which he innocently accepted, as the result of which he worked for many months in Count Zeppelin's factory."

"Grief at having fallen into the German trap is said to have shortened his days, M. Chevreux, who was well known in Paris Art circles, was a friend of Maupassant, for whom he constructed a yacht which one of the novelist's books made famous."

**Siamese Airmen for the Front.**

THE *Petit Journal* reports that several squadrons of perfectly trained Siamese airmen are now assembled at Bangkok,

"Lieut. Udet obtained his 41st, 42nd, and 43rd aerial victories, Lieut. von Richthofen his 31st and 32nd, and Sergt. Thom his 26th."

"Lieut. Billik has gained his 28th aerial victory."

"Sergt. Thom obtained his 27th aerial victory."

**Austrian.**

"On July 31st, in the south-west (Italian front), one of our most successful chasing airmen, First Lieut. Frank Linke Crawford, met a hero's death in aerial combat."

**Bulgarian.**

"In the region of Monastir, after a fight in the air, an enemy aeroplane was brought down in flames behind our lines."

**Turkish.**

"Last night some enemy aeroplanes attempted to attack Constantinople, but were driven off by our defences. A few bombs were dropped without causing any damage."

"On the Palestine coast sector to-day there was lively aerial activity."

"A British seaplane fell into our hands in the Dardanelles on July 29th, and its occupants, two British officers, were taken prisoners."

Berlin, August 3rd.

Berlin, August 4th.

Berlin, August 5th.

Vienna, August 3rd.

Sofia, July 28th.

Constantinople, July 27th.

Constantinople, undated.

where they will shortly embark for France. The contingent represents a voluntary contribution by the Siamese Government.

**Escaped from Russia to Canada.**

FLIGHT-LIEUT. T. GOUBJILA is in the Military Hospital, Coburg, Ontario, having escaped from Russia," writes the *Daily Telegraph* correspondent in Montreal. "He is a Roumanian, and the son of a Bucharest Senator. He enlisted in the Russian Flying Corps at the outbreak of the war, and fought on the Caucasian and Austrian fronts. He has received four decorations, and has been wounded many times. He was sent to many hospitals, and finally to Petrograd, whence he escaped to Vladivostok, China, Tokio and Canada."

**Denmark Returns German Aeroplanes.**

THE Danish paper, *Ekstra Bladet*, reports that the two German aeroplanes used by Professor Nicolai and his comrades on their flight from Germany have been returned to the German military authorities by rail. It is stated that the machines were regarded as stolen goods and therefore could not be interned.



Last week Mr. Algernon E. Berriman, O.B.E., F.A.E.S., M.I.A.E., Chief Engineer of the Daimler Co., and who was for many years associated with "FLIGHT" and its sister journal, the *Auto.*, as Technical Editor, was married at the Chapel Royal, Savoy, to Miss Enid Kathleen Sutcliffe, of Leek. The bride and bridegroom immediately after the ceremony.





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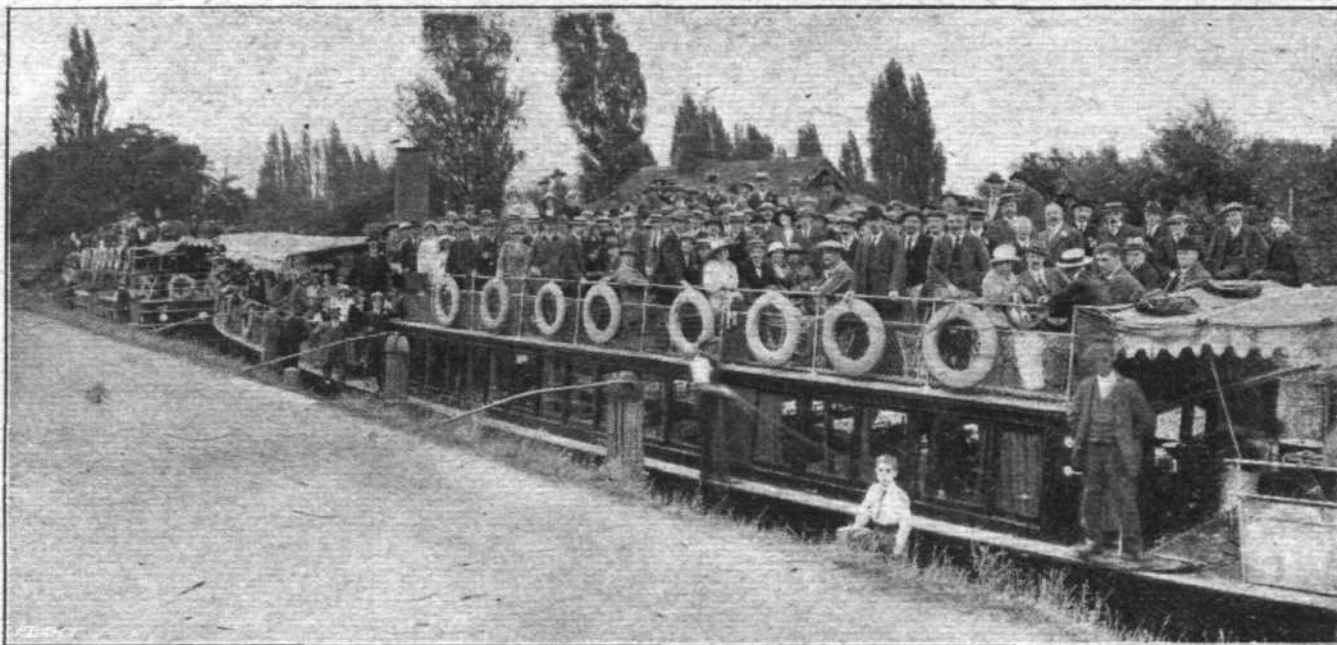
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6.

SPORTS AT QUEEN'S CLUB OF THE SUPPLIES DEPARTMENT, AIRCRAFT PRODUCTION, FOR THE BENEFIT OF THE R.A.F. PRISONERS OF WAR FUND.—1. Wheelbarrow race; the start of final. 2. Cigarette race; lighting up. 3 and 4. Obstacle race; eating the treacle bun on a string and negotiating the double tyre cover obstacle. 5. Ladies' tug-of-war; the winning team at work. 6. 100 yards ladies' final; Miss Barrett (on left), who wins by a shade, and Miss Firth, who thought she was winning easily.





**DAVIDSON AVIATION WORKERS AT PLAY.**—After many months of strenuous work the Davidson Aviation Company's workers again decided to hold their annual outing up river, and although several well-known launches were chartered to convey the party from Richmond Pier, lack of accommodation compelled many to make the journey to Shepperton by rail. Our picture shows the "England" and "Viscount" at Shepperton, where a most enjoyable afternoon was spent.

## LEISURE HOURS.

THE R.A.F. Prisoners of War Fund should benefit considerably as a result of the Sports Carnival in connection with the Supply Department of Aircraft Production held on Saturday last at the invitation of Brig.-Gen. W. Alexander, C.M.G., D.S.O. In spite of the fact that the weather looked very unpromising there was a large attendance of friends of the competitors and others and as General Alexander defrayed all the expenses the whole of the receipts go to swell the Fund which is doing such splendid work. As may be gathered from the "snaps" on the previous page in many of the events the competition was very keen and in addition to the ordinary items there was a cricket match—Ladies v. Officers—which provided considerable amusement and some fine exhibition lawn tennis. The band of the Artists' Rifles played during the afternoon and tea was served to all visitors.

On Monday the cadets at a certain training centre had a "joy-day," the proceedings including a display in which No. 8 Cadet Wing made a living record of the R.A.F.'s battle honours, "V.C.'s, 15"; "D.S.O.'s, 235"; "M.C.'s, 905"; "D.S.C.'s, 287." This was followed by a most impressive march past of the cadet wings, the salute being taken by Lord Weir, Secretary of State for the R.A.F. Among the other proceedings was a display of massed boxing, a sport which plays an important part in the training of R.A.F. cadets.

Just a reminder to reserve August 24th for the R.A.F. Hospital Fund's Regatta and Water Carnival, at Shepperton-on-Thames. A fine programme of competitive events has been arranged, of which particulars will gladly be given by the Hon. Organiser, Mr. F. Norman, Docket Point Cottage, Shepperton. The pageant of ships promises to be a magnificent spectacle, as practically every important aircraft firm will have 25-ft. models ranging from the ancient British coracle to the Whitehead aerial liner of 1950. If purchased before the day the tickets for the enclosures cost 4s. 6d. and 2s. 6d.

## PUBLICATIONS RECEIVED.

*The New Moon.* By Oliver Onions. London: Hodder and Stoughton. Price 6s. net.

### Catalogues.

*Wood-Working Machinery for Aircraft Manufacturers.* Thomas Robinson and Son, Ltd., Rochdale.

*Weldless Steel Tubing: Special Sections for Aeroplanes.* Accles and Pollock, Ltd., Oldbury, Birmingham.

*Industrial Varnishes, Japans, Enamels, etc.* Jensen and Nicholson, Ltd., Goswell Works, Stratford, E. 15.

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## FLIGHT

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